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CONVOLVULUS MINOR.

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THE QUESTIONS OF FORESTRY and rainfall and the change of climates of large areas in long periods of time are receiving attention at the hands of many, at least by writing newspaper and magazine articles, and these will, no doubt, be productive of good. It is unquestionable that more tree planting is desirable in nearly all parts of the country; it certainly is in this State, and an arbor day that should be made a legal holiday would have the effect to produce, in time, an impression upon the minds of the whole body of people, and the first effects of it would probably be noticed in the improvement of the home grounds, which, especially in most country places, are sadly in need of the beautifying effects that may be produced by "these fair ranks of trees," where feathered tribes may make their homes and gladden us with their music, and where, beneath their shade, "is beauty such as blooms not in the glare of the broad sun." Flowering shrubs and blooming plants at every season would brighten the cheerless grounds, and tend to turn our thoughts occasionally away from our cares into a healthful and natural channel. The school grounds, too, would soon feel the effect of this public awaking to the importance of trees. The places where our children spend so large a portion of

their early years would be thought worthy of some little care; where now the school yard is a niggardly quarter acre, or even less, as in many cases, it would be enlarged to an area sufficient to admit of some tree planting for effect, and for beds of flowering plants, and for children's gardens, and for ample play grounds. The village streets and squares we might hope, too, would then present a different appearance. In most villages in this State there is at least one public square, and with scarcely an exception, they must all be characterized as poverty stricken, considered in the light of ornamental grounds. A few ill-shaped trees, with tall, naked stems, mostly planted in straight lines, are evidences of the sole attempt at landscape art, and indicate the average horticultural attainments of the people. From such improvements we turn with a sigh of relief to the water courses and woodlands in their wildness, where "every prospect pleases," feeling more fully convinced of the truth of the poet's expression, that "only man is vile." But the good spirit that watches over trees is waiting upon us, and gradually our people are beginning to be inspired for better deeds. We need the arbor day, with all its incentives, and all the associations that it will eventually bear in its train.

The subject of forestry is an important

one on many accounts, and we think it will soon have the attention it demands from the whole public. That spring torrents, and floods, and summer droughts, are, as a rule, events peculiar to regions that are lacking in arboreal vegetation, must be considered as proved. And enough has been done in certain parts of Europe to make it evident that these disasters can be greatly controlled, if not wholly averted, by judicious and systematic forest planting.

In the April number of the *North American Review*, FELIX L. OSWALD, in an article on the "Changes in the Climate of North America," produces some statements supported by facts that should interest every thinking person in this country on the subject of forestry in relation to the weather and the crops. Reviewing some of the climatic changes that have gradually taken place in Europe and northern Africa, he concludes:

"From Suez to Gibraltar the coast lands have wasted away in a decline, which seems to be the ultimate fate of all civilized countries. * * * Our civilization is but of yesterday compared with that of the Mediterranean nations; but ours is the age of rapid transits. The ancients traveled the same road, but at a slower pace. * * * They had no steam saws, no wood-devouring railroads, and even cottages were mostly built of stone. In two centuries the lumbermen of the United States have killed as many trees as the inhabitants of southern Europe felled in the two thousand years between the foundation of Rome and the conquest of Grenada. The same causes begin to produce the same effect."

Then follow some facts of changes of climate in different parts of this country that are of remarkable significance.

DWARF MORNING GLORY.

A bed or mass of the Dwarf Morning Glory in full bloom is a charming sight, and it is far less cultivated than its merits deserve. Its real value will not be half appreciated when only a few plants of it are seen in a place, or a single row of them; it should have a broad space. *Convolvulus tricolor*, or *C. minor* of the catalogues, is a native of many parts of the Mediterranean coast. Its stems only grow

about a foot in length, but as they are weak and decumbent, or trailing, the plants appear about six or eight inches high. Each plant will cover a space of two or three square feet, and produce flowers all summer.

The seeds should be sown in light, rich, mellow soil, where the plants are to remain, for there is no advantage in transplanting them, in fact, they develop faster and stronger if never moved. As the plants are pretty hardy, it is best to sow the seed early in spring in order to bring the plants into bloom as quickly as possible, but it is still better to make suitable preparation and sow them in the fall. The seeds will not injure during winter in the ground, and will commence to grow in spring very soon after frost is gone. The flowers are in shape like the climbing Morning Glory, but are only about two-thirds of their size. The typical species has the border of the flower of a rich, deep blue, below which it is white, becoming sulphur-yellow at the throat and in the tube; but there are varieties with different colors, as represented in the colored plate. The flowers open in the morning in fair weather, and remain open until towards evening on bright days, but they close when it is stormy or cloudy.

Very fine effects are produced by sowing the seeds to form broad masses or patches, and planting other masses beside them with flowers of contrasting colors. *Linum grandiflorum rubrum* is an excellent plant for this purpose, so are the scarlet and white *Phlox Drummondii*. The French have a very pretty name for this plant, which is *Belle-de-jour*; it is quite appropriate as indicating its love of sunshine, and is in striking contrast with their name of *Mirabilis Jalapa*, or Four O'clock, which is *Belle-de-nuit*; this, however, is similarly appropriate, and the Day Lady and the Night Lady are complementary in the exhibition of their graces.

Seeds started early in the winter will give fine plants for blooming in the window and in hanging baskets, supplying a great amount of bloom at a season when usually it is much wanted. This plant is one among the few annuals that are hardy, vigorous and free-blooming, with handsome flowers, that are adapted to very general cultivation.



CELERY—PRIZE ESSAY.

I have always cultivated my own Celery, and what little I know about the matter has been learned by experimenting. I will try to tell, as simply as I can, what my experience has been.

For the past seven years I have, for the benefit of my health and a love for outdoor work, been my own gardener, and have taken charge of both vegetable and flower gardens. I have not only taken charge of them, but have done the work myself. Until the past six years the cultivation of Celery has not been carried on extensively here. It was thought to be a very tedious and difficult operation, and the majority of people considered it too much work, besides a great many did not know how to treat it. Six years ago, I made up my mind I would make the trial and see what I could do at Celery raising. It was then too late to get seed and raise my own plants. I happened to remember an old English gardener who raised plants of all kinds to sell, and accordingly I called upon him, and inquired if he had any Celery plants for sale, and what variety they were. He said he had plenty of the Boston Market, which he considered the best variety grown. I asked him if he thought I could raise Celery. "Why, certainly," says he, "if you can raise other vegetables you can raise Celery." He sold me some plants and gave me some information concerning the treatment they should receive. I went home with my plants and had a trench prepared after the following manner:

I had it dug about a foot deep; I then put in equal parts of wood-ashes, dressing from the hen-house, and rich, black soil, which I worked up well together with a hoe. I then set the plants about six inches apart, packing the dirt firmly

at the roots, after which I gave them a good sprinkling twice a day until they had taken root enough to be firm in their places. Then I kept the trench nearly filled with water. I could do this very easily, for my garden bordered on a pond where I could dip the water up by the pail-full, and use it as freely as I wished. I had heard some one say Celery was a water plant, so I gave it plenty, and found that it agreed with it splendidly.

When the plants had made growth to cause the branches to lie over, I hilled them up a little, just enough to keep the stalks erect. I kept up the hilling process at intervals of about two weeks, all summer; always hilling when the weather was dry, and being careful to hold the stalks together with one hand to keep the soil from getting into the heart of the plants. As I wished to get some blanched early for our fair, which was to take place the fifteenth of September, I did the last hilling the first of September, which gave it two weeks time to bleach.

The heads were very large and branching, as I believe is usually the case with Boston Market. The stalks were white and crisp, and upon the whole was considered very nice Celery, and far exceeded my expectations. I exhibited some at our fair and was awarded first premium.

My second year's experience was as follows: Some of my friends suggested to me that Turner's Incomparable Dwarf was superior to Boston Market for the table. I concluded to get seeds of it and raise my own plants, and did so. Having no hot-bed, or any other proper convenience for raising the plants, I sowed the seeds in boxes and raised the plants in the house. Of course, they did not have the same chance to grow that they

would have had in a hot-bed, and had to be put out in the border when quite small. But they became good, stocky plants, and by the last of June were fit for trenching. I prepared the trench in the same manner as before, except having no dressing from the hen-house, I used that from the blacksmith shop instead, which I think is far superior to the other, and the best fertilizer ever used among vegetables and plants, on account of having so much of the paring of the horses' hoofs in it. I did not have water as handy as before, as we had removed to another place, and could not give the plants as much water as they needed, therefore did not get as large a growth, but the quality was good and the flavor excellent. The flavor being better, I think, was owing to the variety. I exhibited some at the fair, in September, and was again awarded first premium, which made me think I was a captain at raising Celery.

My third year's experience. This year I concluded to raise two varieties. I bought, with other vegetable seeds, one package each of Turner's Dwarf and Sealey's Leviathan. Having sickness in my family I could do nothing about gardening until very late. The last of April I prepared a bed out of doors, on the south side of the house, in a sheltered situation, sowed the seed, and kept the bed moist by sprinkling it often. The seeds came up sooner than when I sowed them in the house. The plants made a rapid growth, and were very strong and thrifty. I prepared the trenches the same as before, and set the plants right from the seed bed, where they had made such a fine growth that it was not necessary to transplant them out in the border. In trenching, this year, I put the plants about five inches apart, and kept the trenches well filled with water, as I was living, this year, where I had a well in my garden. I used to pump the water into tubs, let it stand until warm, and then fill the trenches. The hilling process was about the same, hilling at intervals of about two weeks until the first of September, then I banked it clear to the top, and by the twentieth of September I had the most beautiful Celery you ever saw. The heads were large, the stalks two and a half feet long, very solid and crisp, and as white and smooth as polished ivory. I exhibited some at the fair, and was

again awarded the first premium. Of the two varieties raised this year, I think, Turner's is superior to the other; Sealey's Leviathan grew larger, but Turner's was crisper and of better flavor.

I think hilling at intervals all through the season to be an improvement for this reason: When the stalks are held together they shade each other, and almost the entire head will be crisp and fit for eating. Otherwise, if the stalks are allowed to sprawl about all summer, and hilled in the fall, there are many of the outside stalks that will be tough and never bleach enough to become fit for use.

My method of Celery culture is this: 1st. Send where you will be sure to get good seed.

2d. Prepare a seed-bed out of doors in a sheltered situation. You will get your plants early enough by so doing, for they grow much faster and are much stronger than when grown in a hot-bed.

3d. Sprinkle the bed often to keep it moist, and when the young plants are about three inches high transplant them into rows, putting them about three inches apart in the rows, and the rows about one foot apart.

4th. When the plants have become stocky, have a trench dug about one foot deep, put into it equal parts of wood-ashes and good rich dressing, and rich, black soil, and work all together with a hoe.

5th. Set the plants about five inches apart, and be sure to straighten out the roots and press the soil firmly about them.

6th. Sprinkle them enough to keep them fresh until they are firm in their places, and then give them all the water you have a mind to, the more the better.

8th. When they have made growth enough to cause the branches to lie over, hill up enough to hold the stalks erect. Continue the hilling process at intervals of two weeks, all summer, being careful to do it when the weather is dry, and in the afternoon when the dew is off. Be sure, when hilling, to hold the stalks together, to prevent the soil from getting into the heart of the plants.

9th. Such portion as you wish for early Celery bank to the top by the first of September; for winter use bank to the top from the first to the middle of October.

I think by following these instructions almost any one can raise Celery fit for a king, and when we get the varieties

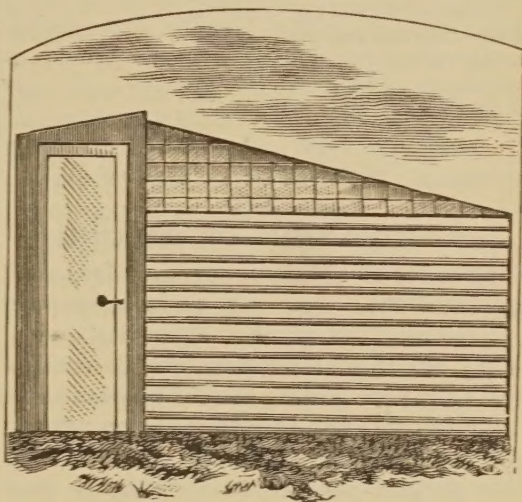
called White Plume and Chemin's introduced here, which need no banking, I think we can raise Celery fit for the queen.—MRS. C. H. ROOT, *Ripon, Wis.*

A CHEAP GREENHOUSE.

Our greenhouse was built last fall. For a number of years I have cultivated flowers in the garden and house, and like many another of your readers have often wished and longed for a greenhouse, but supposed that one could not be built for less than three or four hundred dollars. Now I propose to tell how a small greenhouse was built for less than fifty dollars, and if it should seem to be an insignificant affair to you, I may be pardoned for presuming to write, on the ground of being an amateur, and having never seen a house built, and possibly may be vain of success. I have enclosed a bill of cost at prices for which the materials can be procured here.

The building is twenty feet in length and ten feet wide. Four posts, each four by six inches and nine feet in length were set one-third under ground and boarded up with Hemlock boards, and covered with Pine clap-boards, putting heavy Eureka building paper between. This formed a solid wall six feet high and twenty feet in length. The ridge pole, the supports of which were placed three feet from the wall, is eight feet from the ground, thus forming a north roof four feet wide, which was boarded up also, making a perfectly air-tight wall of three thicknesses from the ground to the ridge pole. The south and the side walls are built in a similar manner, the walls being four feet high. The posts on the south side are four in number, and support a gutter plate of four by six inches, to which the ends of the roof are nailed, securing it firmly to the wall. We found it necessary to build a small lobby in order that we could enter the house without bringing the cold air in direct contact with the plants. The greenhouse is partly protected on the west and north by the dwelling house, barn and orchard. For heating I concluded to try a small globe stove; it was placed at one end and near the door on the north side. By removing about two feet of the surface soil and thus making a pit in which to stand the stove, I was enabled to pass the pipe under one of the

benches to supply bottom heat for the propagation of cuttings; after passing under the bench the pipe is run up through the north roof into a pipe smoke stack, no chimney being used. During winter about one hundred pounds of coal a week is required, counting from December first to March first, and the winter has been unusually severe. By



END VIEW OF GREENHOUSE.

regulating the air-drafts properly at nine o'clock in the evening the fire can be left without attention during the night. There is not much trouble about sufficient heat, but once or twice our plants have been slightly injured with coal-gas, just enough to make us watchful.

Most of the space in the interior of the house is occupied by benches containing plants in pots plunged to the rims in sand, only one alley being left through the middle of the building. There is a large variety of plants in the house, considering its size. Carnations and Roses are blooming (February 9th,) in the cooler parts, while Callas and Coleus are placed near the stove and almost over it. Geraniums, of which there are seventy choice varieties, seem to do exceedingly well any where. I am obliged to fumigate once a week, and also to be careful about the use of water, especially during the many cloudy weeks of the last two months. I find that although some plants need more moisture than others, as a general rule, one good drenching each week is sufficient. Water is kept constantly on the stove to give sufficient moisture to the atmosphere. The plants, without exception, are doing exceedingly

well, and much of my success is attributed to the information derived from the MAGAZINE and GUIDE.

BILL OF COSTS.

30 Pine Siding, 10 feet each,	\$9 00
30 Hemlock boards, 10 feet each,	6 00
25 yards of Paper, 5 cents a yard,	1 25
3 Doors, \$1.00 each,	3 00
2 Sash ends, with glass,	3 00
3 Boxes of glass,	7 50
20 Rafters or sash for roof,	3 20
4 Timber sticks and gutter plate	2 49
Ridge Pole and supports	1 00
20 lbs. Putty,	1 00
36 feet 2 by 4 joists,	72
Slabs for lobby, stove and pipe,	6 10

Total, \$44 26

—MRS. G. H. NORTHRUP, *Seaford, N. Y.*

CULTIVATION OF ONIONS.

In order to obtain a successful as well as profitable crop of Onions, certain requisitions must be complied with. They are these: 1st, new, choice seed of the very best quality should be obtained; 2d, a suitable soil should be selected, and the most suitable manure obtained; 3d, the ground should be thoroughly prepared, and the seed properly sown, and last, but not least, the crop should be well cultivated and cared for.

I know of no vegetable in which the quality of the seed has a greater influence than the Onion, therefore, the greatest care should be taken to procure the very best, regardless of cost. Do not procure cheap Onion seed in any case, for most if not all of it is worthless, and will certainly prove to be very dear to the purchaser in the end.

The most suitable soil, and one that should be selected, if possible, is a very rich sandy loam, one that has been heavily manured and well cultivated for hoed crops for two or three years previously is the best, and I would impress this fact upon all, that it is entirely useless to attempt to raise Onions on a poor or unsuitable soil. Care should also be exercised in the proper selection of the manure used for the crop. Nothing is better than good stable manure well decayed, and finely pulverized, and if a liberal quantity of bone-dust can be mixed with it, so much the better. Commercial or concentrated fertilizers are much esteemed by some, and have been used with very satisfactory results, but it is well to be very careful in their use.

Suitable preparation of the soil is also

of the greatest importance, and to accomplish it a considerable portion of the work should be done early in the autumn; all the refuse of previous crops should be collected and removed, and the manure applied at the rate of thirty to forty two-horse loads to the acre, spreading it as evenly as possible. The manure can then be plowed in to a moderate depth, or about five or six inches, and then a good dressing of bone-dust, wood ashes, or superphosphate of lime, may be given and worked in with a cultivator in the opposite direction to which it was plowed, and the ground left in this rough condition. Early in the spring, as soon as the ground is dry enough, cultivate again, then harrow it in all directions so as to thoroughly pulverize the soil and to have it as fine as possible.

The seed should be sown very early in the spring, just as soon as the ground can be prepared. Sow in drills from sixteen to eighteen inches apart, being very careful to have the rows straight, in order to facilitate cultivation. Use a good seed drill for sowing, one with a roller attached for covering, and have it properly regulated for sowing the seed to the desired thickness, and covering it about half an inch in depth, remembering that thin seeding produces the largest Onions. From four to five pounds of seed will be sufficient to sow an acre. As soon as the Onions can be seen in the length of the row, they should be hoed, just skimming the ground between the rows, using a scuffle or push hoe; in about two weeks hoe again. After this they should be thinned out and weeded, being careful not to disturb those that remain. In about two weeks they should be hoed and weeded again, and repeat the operation as often as necessary until the plants cease to grow.

As soon as the tops die down, the crop can be gathered, storing it in a dry, cool, well ventilated room, spreading them out thinly at first, afterwards they can be placed more thickly, say four or five inches in depth. On the approach of cold weather close all windows and doors, and keep the temperature just above the freezing point, but if they happen to freeze it will not injure them unless they are permitted to thaw and freeze again. When Onions are raised in quantity a very popular method of keeping

them is to spread straw on a barn floor to a depth of eighteen inches, on this spread the Onions, and cover with two feet or more of straw; in this way they will keep until May.

Of the many varieties, the following are the best for field cultivation and market purposes:

Large Red Wethersfield, of large size, very productive; the best keeper, one of the most popular for general cultivation.

Early Red, two weeks earlier than the above; of medium size, very productive.

Early Globe Danvers, of medium size, with a yellowish brown skin and white flesh and having a very mild flavor.

Large Yellow, or Yellow Dutch, is a very popular market variety, having a white flesh and mild flavor.

White Globe produces handsome globe-shaped bulbs of a very mild flavor.

White Portugal, a large, flat, mild-flavored Onion, not one of the best keepers.

For pickles, or set Onions, sow and treat as above advised, but do not thin them. Sow thickly at the rate of forty pounds per acre; these little Onions, if planted in the spring, will form large Onions sooner than seed.

The Potato Onion produces a quantity of young bulbs around the parent root. They should be planted early in spring, in rows eighteen inches apart, six inches apart in the rows and one inch in depth; the large bulbs produce small ones, the small ones, large, alternately.

Top Set, or Button Onions, produce, instead of seed, a number of small Onions at the top of the stalk, which, if planted, will produce a large Onion much earlier than those from seed, the large Onion producing the top and the small top Onions the large ones. The little Onions are generally set out in the fall, in a manner similar to the Potato Onion, early enough to get a start before cold sets in.

The New Italian Onions, of which there are several admirable varieties, have a mild flavor, and grow to a very large size, often weighing from one to three pounds. They do best when grown in the garden, and are not profitable as a field crop. Top sets, Potato Onions, and Onion sets are recommended for an early small crop for home use, or a near market. Grown as a field crop they seldom, if ever, prove to be a profitable one.—CHAS. E. PAR-NELL, *Queens, L. I.*

PROPAGATING A LEMON TREE.

A year ago last July a latent bud on a Lemon tree, which I have, started and rapidly grew to the length of about three feet, and then parted into three or four branches. Last March I girdled this shoot near the main stem, by removing a band of bark about an inch wide, cutting down to the hard wood. Around the place thus laid bare, I built a small wooden tub, filled it with earth and kept it moist. Being abroad during the summer, the branch suffered from neglect, but upon my return I found that it had well rooted. Having cut the stem, I potted it, and now it is full of small blossoms, so numerous that it would be troublesome to count them. Thus, eighteen months since it was a latent bud, and in less than a year since it was layered, as described, I have a Lemon tree rooted and capable of bearing blossoms and fruit.

With equal success I have propagated the India Rubber tree in the same way, and doubtless it will succeed well with every plant capable of being girdled.

It seems to me that this mode has these advantages. By it the strength of the stem is unimpaired, and thus danger of breakage and need of support is avoided; the supply of nourishment from the parent plant is undiminished, as the upward flow of sap is through the vessels in the new wood, which are not cut, and the return flow, which is by the bark, or between the bark and stem, is checked entirely in a complete circle around the stem, for the rapid and vigorous formation of roots. By the usual mode, that of making a slit, the branch is weakened, the supply of nourishment is one-half cut off, and the return flow of sap, by which the roots are formed, only partly impeded.

Suggestion—might not even large trees which have been accidentally barked be saved by girdling them with a sharp knife, constructing a box around the exposed part, filled with earth, the roots thus formed finally reaching and penetrating the ground? A mound could be raised around the base of the tree high enough to receive the new roots, and lead them down into the ground. In the case of injury to valuable trees their usefulness might thus possibly be prolonged for a time.—W. H. H., *Philadelphia, Pennsylvania.*

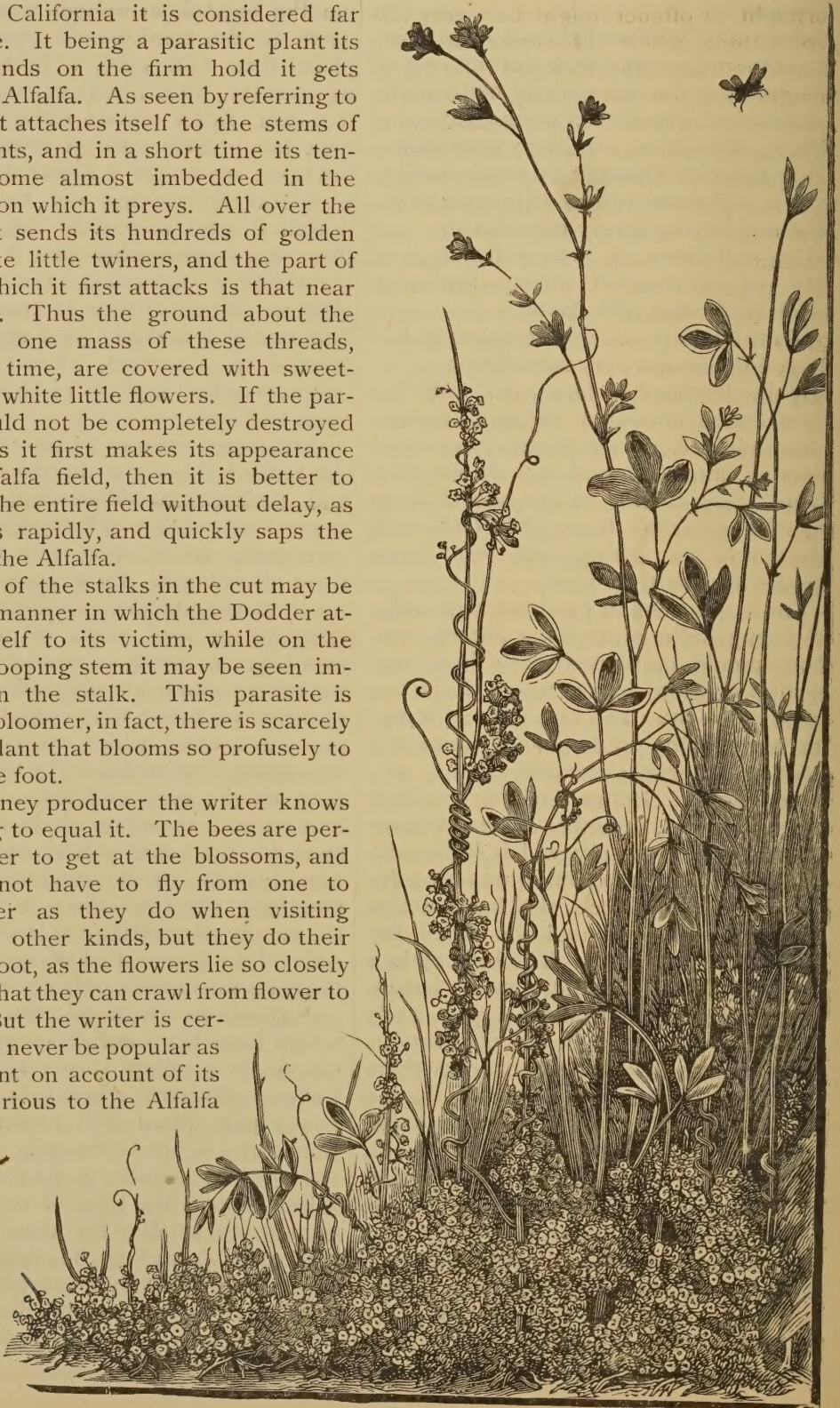
DODDER AS BEE PASTURAGE.

The twining plant shown in the accompanying engraving is what is botanically known as *Cuscuta racemosa*, and commonly called Dodder. To the uninitiated it may appear as a delicate and harmless little plant, but to the owners of Alfalfa fields in California it is considered far otherwise. It being a parasitic plant its life depends on the firm hold it gets upon the Alfalfa. As seen by referring to the cut, it attaches itself to the stems of other plants, and in a short time its tendrils become almost imbedded in the plants upon which it preys. All over the ground it sends its hundreds of golden thread-like little twiners, and the part of a plant which it first attacks is that near the roots. Thus the ground about the plants is one mass of these threads, which, in time, are covered with sweet-smelling, white little flowers. If the parasite should not be completely destroyed as soon as it first makes its appearance in an Alfalfa field, then it is better to plow up the entire field without delay, as it spreads rapidly, and quickly saps the life from the Alfalfa.

On one of the stalks in the cut may be seen the manner in which the Dodder attaches itself to its victim, while on the larger, drooping stem it may be seen imbedded in the stalk. This parasite is a prolific bloomer, in fact, there is scarcely another plant that blooms so profusely to the square foot.

As a honey producer the writer knows of nothing to equal it. The bees are perfectly eager to get at the blossoms, and they do not have to fly from one to another as they do when visiting flowers of other kinds, but they do their work on foot, as the flowers lie so closely together that they can crawl from flower to flower. But the writer is certain it will never be popular as a bee plant on account of its being injurious to the Alfalfa

fields. If it only grew on the noxious weeds with the same tenacity that it does on the plant above named, then apiarists and farmers would hail it as a boon, indeed.—W. A. PRYAL, *North Temascal, Cal.*



THE GARDEN SOCIETY.

Perhaps there is no better way of promoting sociability, good feeling and taste in a village than by a well sustained society of those who love flowers. A horticultural club sounds too formidable an affair, but an easy little sociable once a fortnight, or oftener, might be a very different thing, where the clever amateurs should tell how they managed their house plants, and the one or two successful gardeners, which every neighborhood affords, answer the questions of beginners, and give little talks on the different processes of the art. A common interest promotes sociability, and flowers and gardening will be found far more generally attractive than a Shakespeare reading club, a class in English literature, or the history of renaissance art. Everybody can understand gardening, from the boy in Knickerbocker's, who will not be the least interested hearer, to the ambitious girls and their elders. Best of all, the tired house mothers, who can't study up renaissance or force an interest in old English poetry, can enjoy a lively chat about flowers while they rest and look at somebody's Azaleas just in bloom, or admire the *Fragaria* in the hanging basket. The young folks will like it, for such a society leads to consultations over the seedling Carnations and Pansy beds, and is the organizer of field parties to scour the hillsides for wild plants, and garden parties, not all finery and ice cream. The single women and quiet folk like the society, for they all have a love for flowers, and the spinster, with her prize Gloxinias or Tea Roses, is as much invited and listened to as the young flirts whose only idea of flowers is to wear and eat them, though the flirts know they haven't a better chance for getting a pretty corsage knot now and then than by going to the society. Honest deacon CHILDS, who is shrewd, but slow of speech, is heard much more patiently when he explains his way of raising giant Celery and Gregg Raspberries than when he drawls through his "few remarks" in prayer meeting, and after the fast young members have been treated generously to his Honeyhearts and Concord, and shown over his model garden, they have a new sense that a man may be plain and slow, but call for their respect after all. Mrs. LEADER may invite the whole society to

see the Night-blooming *Cereus* open in her conservatory, or send her *Dracænas* and Ferns to decorate their annual meeting, while Mrs. CARPENTER, who has such luck with her out-door Roses, may strike cuttings for the dozen who would like them. Then, in April, when clearing up the garden, everybody has a lot of stuff to throw away, cuttings and roots which other people would be glad of, and the society gathers and distributes these. I was pining for Woodbine to root in our new home, last spring, and didn't know where to look for any, when my next neighbor threw away a cart load of it, not knowing I wanted some, and another burned a hundred vine and Currant cuttings that I would have given Marechal Niel Roses for. A garden society would have taken care this should not have happened.

The organization of any small society can't be too simple. For officers, are wanted only a Chairman or President, to lead off the meetings, and a Secretary or two to write the letters and keep the journal of proceedings, which ought in time to be very useful. It should not be a dry, curt record of met, present, carried and adjourned, like too many society journals, but contain the gathered experience of the organization as to garden matters, all hints and methods found particularly suited to the region, observations of weather and seasons, records of remarkable fruit, plants and crops grown by members or in the town, with notes of the favored spots for rare wild flowers near. A small subscription will be cheerfully paid when it is known that each member gets more than its worth in plants and seeds. The plan of exchanges and distribution of cuttings or plants from the surplus of gardens, allowing the society to do far more than its mere funds would permit. A small subscription works better than a larger one for keeping up a prosperous society, and a dollar from grown folk and half price for boys and girls is judicious. Those who feel like clubbing together and spending more for seeds and plants may do so, but the aim should be to make all expenses light as possible. People will want to spend as they get interested, without urging. Of course, the society meets in a school house, or better, at the houses of such members as choose to invite it, in

turn. A pleasant place in warm weather is the open floor of a well kept barn, with adjournment to the lawn after, and out-doors is best of all.

One-fourth of the funds ought to go for books and periodicals on gardening, of which there is a woeful dearth in most neighborhoods. A question comes up as to the name of a wild plant or a fruit, and so much as an old botany will hardly be found to settle it. A gathering should be made of all the botanical and garden books lying in hidden and waste places. One member has half a dozen numbers of the *Garden Record* or its predecessor of thirty years ago; another has an odd bound volume of the old *Horticulturist*; another has kept his VICK'S MONTHLY in good condition, and is generous enough to present them on condition the society pay for binding. Stray copies of older botanies turn up in attics and passes, EATON'S, MRS. LINCOLN'S and GRAY'S later text-books, thrown aside by a young collegian, which should all be carefully collected for the society library. One botany will have a description of particular plants more full than another, and on vexed points it is well to compare them. The want of a book at hand often hinders an earnest student vexatiously. Old seed catalogues are interesting for comparison of old and new varieties of garden plants. Perhaps somebody has a copy of such illustrated books as *British Wild Flowers*, or SHIRLEY HIBBERD'S *Sea Mosses* which he is ready to give to the library. The first money spent should go for subscriptions to the best garden magazines which keep up with the latest acquisitions in their sphere, and happily subscriptions in this country are so cheap that five to ten dollars will give one the run of most of the garden and agricultural journals. A large scrap book should be kept for clippings from the horticultural department of the newspapers, secular and religious, all members being urged to contribute to this volume. Some good hand-books of garden and flower culture should be next added, and these are not expensive either. When the practical reading is provided, the society may launch into wider indulgences; a good dictionary of plants, costing five dollars, being the first necessary to a sound acquaintance with old and new favorites, their history and

cultivation. Such books as ROBINSON'S *English Flower Garden*, with illustrations fronting every page, stimulate an intelligent love of plants, and every amateur who glances into them will want PARSON HOLE'S *Book of the Rose* and his *Six of Spades*, the history of a small neighborhood club of six enthusiastic gardeners in different walks of life, which has many shrewd hits and much genial fun with its garden wisdom. The HENRY BRIGHT'S *Year in a Lancashire Garden*, MRS. FOSTER'S *Art of Gardening*, *Riches in a Little Room*, and other delightful books written by lovers of gardening will occur to those who read widely of the best things, while *Vignettes from Invisible Life* is the most tempting little book, elegantly, clearly and eloquently written on the wonders and curiosities of microscopic vegetation, which I recommend to any one wanting a plain idea of amœba, bacteria, protoplasm and all the mischievous things which have become part of our daily reading, sermons and conversations, things of which we talk so much and know so little.

After the library, which should be limited to one-fourth or one-half the society funds, the rest should go for new seeds and plants. Other societies will be glad to make exchanges of seeds and plants peculiar to their regions, so that the little fund will have to be encroached upon only for specific and desirable objects, to be well debated in full society meetings, and chosen to give the greatest satisfaction to the greatest number. The interest must be carefully fostered and allowance made for limited tastes in the beginning. The liberal amateur who longs for rare Ferns and new seedling Roses must be content to see much traffic in Geraniums and Begonias at first, but the majority ought to reserve some choice things for these same amateurs whose tastes are above the rest, but who are often unselfish workers, and whose efforts really lead to the society's best attainments. I close here, not because all has been said on the subject, but because half has not been said of the usefulness, the power for good of such a society in keeping people out of unworthy amusements, in substituting true tastes for low and vicious ones, and in giving zest and ambition to the ordinary pursuits of the home.—SUSAN POWER.

BOUVARDIA LEIANTHA.

The smooth-flowered *Bouvardia*, *Bouvardia Leiantha*, is a very useful, free-flowering, warm greenhouse plant. It is a plant of robust growth, attaining a height of from two and a half to three feet, having erect, downy stems and ternate, dull green, rugose leaves, ovate acuminate in shape, and about four inches in length, producing rich, deep vermilion flowers in compound trichotomous cymes from the axils of the smaller lanceolate, bract-like leaves. On account of its free-flowering habit it is an excellent bedding plant, and is one that is much used for cut flowers during the winter season. When it is desired to use it as a bedding plant good strong plants should be obtained by the tenth of May, and planted out in a well-enriched, deep border. Keep them well watered and stir the surface of the soil occasionally, and they will commence to flower about the middle of July and continue until frost. After the frost has destroyed their foliage they can be taken up and potted, using as small pots as possible, cut them in severely, and place under the greenhouse stage, care being taken not to permit them to become too wet or dry; do not place them in either a warm or too cool a situation, remembering that all that is desired is to keep them in a dormant state.

When grown for flowering during the winter season, they should be planted out as above advised, and pinched back occasionally so as to form nice bushy plants; at this time they should not be permitted to flower. About the first of September they should be taken up very carefully and potted, using a pot proportionate to the size of the plant, a compost of two-thirds well-rotted sods, one-third well-decayed manure, and a little bone dust, well mixed. Good drainage is also indispensable to success. When potted shade and water freely for some eight or ten days, after which they should be exposed to the sun until cold weather sets in, when they should be brought inside. Water occasionally with liquid manure and place in a light, sunny situation, and if many flowers are desired they should be given a temperature of from 55° to 60°; they should be also freely syringed in order to guard against insect pests to which they are unfortunately

very subject. Propagation is effected by cuttings of the young wood in heat, also by division of the old plants, as each shoot with a root attached will make a strong plant; the proper time to divide them is in March, then they can be given enough heat to induce the young plants to make a vigorous start. After the old plants have been divided, the pieces should be potted in as small pots as possible, carefully watered, and placed in a warm, moist situation; water sparingly until growth commences. In cultivating this *Bouvardia* do not permit it to become pot-bound, yet be careful not to over-pot the plant.—C. E. PARNELL, *Queens, L. I.*

EXPERIENCE WITH GERANIUMS.

The Geranium being a very popular flower much has been written respecting it. In regard to the culture all floral writers seem to agree in the opinion that plants which have bloomed all summer will not bloom in winter, and that for winter-blooming cuttings should be taken during the summer or early in the fall. Now, my experience has been entirely different.

Last May I set out a number of Geraniums, mostly young plants, of about thirty varieties. They bloomed continuously all summer. In October they were taken up, and with the exception of about eight of the finest ones, placed in the cellar. These eight were potted and put in a west window. From these Geraniums I have had flowers in the window all winter to this date, and from the buds on them will have until spring. They were given only ordinary care. Soil, half leaf-mold, half sandy loam; temperature, 60° to 70° during day time, 40° to 50° during the night. With young plants from slips taken in September I have had no success, though growing in the same window. Hereafter I shall use only old plants for winter blooming.

As to varieties, three of the finest which I have grown are Anna Scott, new, single, a dark velvety red shaded with purple; Dazzler, single, well described by the name, a dazzling scarlet with white eye and extra large flowers; Ernest Lauth, double, a beautiful shade of crimson tinted with violet, very large truss. The three varieties named, with me, have been free bloomers, winter and summer, and should be in every collection. Other fine varie-

ties, of which I can speak from experience, are Pauline Lucca, New Guinea, Gambetta, New Life, Maggie Hallock, Richard Brett. I expect to add largely to my list of varieties in the spring.

I have been a subscriber to your MAGAZINE during the past year, and its monthly visits have been very welcome. W. L. R., *Cohoes, N. Y.*

HERBACEOUS CALCEOLARIAS.

For plants to flower the following spring, I sow the seed the first week in June. The seed should be sown in shallow boxes or pans with plenty of drainage at the bottom. A good soil consists of old leaf-mold and light loam with a small proportion of sand. Cover the seed very lightly with fine sifted soil, and water with a fine rose. Place the box or pan in a cold-frame on cinders or ashes, protect it from rain with a sash, and shade lightly from the sun. As soon as the second leaf appears prick the little plants into the smallest pots, with somewhat richer soil than they were started in. Keep potting the plants as they advance in growth, use plenty of drainage, and at no time allow them to become pot-bound. Give the last shift in January or February, with eight-inch or larger pots, according to the size of the plants. After this, water once a week with liquid manure. At all times give them plenty of room and keep them near the glass.

Before they throw up their flower stems, if the leaves are of a yellow color, water them with some lime water. Take a piece of quick lime three or four inches in diameter and slake it in three or four gallons of water, allow it to settle and afterwards pour off the clear liquid; with this saturate the soil in the pots, and it will kill any insects or worms that may be there.—HENRY COOPER.

BRAN FOR CABBAGE WORMS.

For five years I have been trying to raise a crop of Cabbage, but the worms would get ahead of me, until last year. After the worms first appeared I gave the Cabbages a thorough dressing of middlings, or shorts; in about a month with another installment of worms I did the same thing, and then, at the end of the season, stored a hundred fine heads of Cabbage.—S. A. H., *Miami, Indiana.*

ANNUALS IN THE WINDOW.

I should like to tell you of my success with out door plants in the window garden. The season with us, last summer, was hot and dry, with frost coming so early that many of my plants had not bloomed. I took up three young annual Larkspurs and removed them to the house. They all proved to be double, a light, and a dark blue, and a pure white, which were very showy. They began flowering early in January, and have continued ever since, as I cut off the blossoms before the seed formed.

I also took up six Autumn Stocks that had not flowered. Five of the six proved double, of brilliant colors; one, a lovely Heliotrope shade, has six long spikes of flowers, and the growth as luxurious as I ever saw out doors. I don't think your readers know what a charming addition these summer flowers make to the winter favorites that we are all so familiar with. I have also had *Calendula Meteor* and *Salvia* constantly in bloom, making a bright setting for the trailing vines that hang from all the brackets. The MAGAZINE is a welcome visitor.—MRS. J. H. WILLIAMS, *South Windham, Maine.*

COCKROACHES AND TOADS.

Permit me to give my experience with cockroaches. When I first moved into the house I am now occupying, I found it almost overrun with them. I used borax, Persian powder, &c., in large quantities without much effect, until I hardly knew which was the greater nuisance, the bugs or the remedies. When I started my flower garden and conservatory, two years ago this spring, I thought no garden complete without toads, so when we took our carriage rides, in the summer, I took along with me a large-mouthed bottle, and succeeded in catching one large and several small toads, which I set at liberty in the garden. That fall and winter the bugs were not quite so numerous, and by the next summer had entirely disappeared, and it is now nearly a year since we have seen one. My theory is, the toads did the business; am I right? I purpose to catch some more, this summer, as they must go under the fences, from yard to yard, and so supply the whole neighborhood and let the good work go on.—J. E. C.



FOREIGN NOTES.

THE PRIMARY COLORS.

What with the overthrow of the wave theory of sound, and the practice of vaccination for small pox, and now of the constituents of the primary colors, it would seem as if science were being badly wounded in the house of its friends, or that, like NOAH'S dove, it could find no resting place. But it is hardly so bad as that. The false theories of science are set aside that we may lay sure foundation stones, and that we may be enabled to say in the spirit of GALILEO, "*E pur si muove*"—it does move for all that. Nothing is, or should be, more pleasing to the true scientist than the breaking of his idols, when their false character is certainly learned. Of the merits of this new theory of the primary colors we have no knowledge, but give this statement as it lately appeared in the *English Pottery Gazette*. "The accepted theory of color has at last found a disbeliever, and from having been considered an immutable fact it is now believed to be an unsound conclusion to hold that the three primary colors are red, yellow and blue. The late Professor MAXWELL has, we are told, proved beyond question that the essential primaries are red, *green* and violet, so that a good many essays and elaborate works, as well as more numerous volumes of advice to painters, must be wrong from the very beginning. The admission of green into the notable trio is thus accounted for. 'The difficulties which stood in the way of an accurate determination of the primaries were largely due to an element of confusion introduced by the use of pigments for the purposes of experiment. People who were accustomed to mix blue paint and yellow paint to produce green found it difficult to believe that the green of the spectrum was anything more than a mix-

ture of the blue and yellow by which it was bordered; but an admixture of the blue and yellow of the spectrum does not produce green, but white. The blue light being a compound of green with violet, and the yellow light being a compound of green with red, the two together afford the three primaries, which combine to form white. In the paints, on the contrary, the material which appears blue absorbs and quenches red, while the material which appears yellow absorbs and quenches violet; so that only the green, which is common to both, is reflected unchanged to the spectator from the mixture.'"

ORCHIDS IN VINERIES.

The *Orchid Album* says: "In November last, while calling at the Grange, Stretford, we found two span-roofed vineries, in which there were good crops of Grapes, such as Muscat, Black Alicante and others; and beneath these vines, standing on the curbs, or suspended from the roof, was growing a collection of Dendrobiums, occupying the whole length of the two houses, and among them many fine specimen plants, with well-ripened bulbs, which promise well for bloom. *D. Wardianum giganteum*, *Devonianum*, *crassinode*, *Ainsworthii*, *thyrsiflorum*, *densiflorum* and *nobile* are particularly mentioned. The plants had been grown in the same houses for some time past, and are found to succeed well with the treatment given to the vines."

THE BRIDAL WREATH.—"At the present day, in our own country," says the *Florist and Pomologist*, "the bridal wreath is almost entirely composed of Orange blossoms on a background of Maidenhair Fern, a sprig, here and there, of *Stephanotis* blending its exquisite fragrance."

TREATMENT OF SEEDS.

Have any of your readers ever remarked the effect which dry treatment has on newly sown seeds when they vegetate? In nine cases in ten, the first thing the cultivator does after sowing a pot of seeds is to water them thoroughly. Some even steep certain seeds in water previous to sowing, which may be advantageous in certain cases; but I am far from thinking that immediate soaking of newly sown seeds is beneficial. I first noticed this in the case of Melon and Cucumber seeds, viz., that those seeds which were not watered for some days after sowing germinated most freely and most healthily. Those which were well watered when sown were weakest and palest in the foliage, and the difference was quite apparent to any one. Since then I have carefully abstained from watering all seeds we are particular about until they have begun to swell and burst their scales. Several physiological explanations of this suggest themselves; but here I only state the fact that seeds are better not watered till some little time after being sown.

This may not appear to be a great matter; but I know that in the case of fine seeds, sown under glass, there are often great disappointments, and much depends on management. The seedsmen, or the quality of the seeds, are not so often to blame as people sometimes think. No cultivator of experience expects more than a liberal percentage of his seeds to grow, while some are always doubtful; but, unless the sowing is managed skilfully, many things may fail partially or altogether. Covering seeds too deeply is one of the most fertile causes of failure; many a failure is due to this, and the cause is never suspected.

The seed should, in the first instance, be sown on a perfectly level and even surface, and then sprinkled over with a compost put through the finest of sieves. I am speaking of seeds like those of the Primula, Cineraria, Lobelia, Carnation and Calceolaria. It does not matter so much what kind of compost the seeds have got under them, but that above them should always be fine and open, consisting in large part of sand and peat, or leaf-mold, which will be found suitable for covering any seeds. But, rather than put too great a depth of even this light compost over very small seeds, it is bet-

ter to barely cover them out of sight, and place a sheet of newspaper over the pan, or box, till vegetation takes place. The only object of covering seeds seems to be to keep them moist, and this can be effected with a paper cover only, laid over the box. Begonia seed is often sown in this way, it being too fine to be covered.

Next to these matters comes watering. A pot or pan of fine seed is soon cleared by a careless waterer or an awkward watering pot. The rose of the watering pot should be very fine, consisting of many holes, as small as they can be bored, so that it will just deliver the water in a gentle spray or mist, and not with sufficient force to dislodge the seeds or disturb the surface of the soil. Seed pans should never be floated with water, or the likelihood is the seeds will all swim to one corner, and that many of them will be buried and never come up. The rules to be observed in the case of out-door seeds—flower seeds and vegetables—are the same. Sow when the soil is in an open, friable state, and cover thinly, in proportion to the variety of seed. Peas will push through three inches or four inches of soil, but more will vegetate under less top weight, especially in heavy soils. The nature of the soil should always receive attention. Seeds sown in light, sandy soil are safe under a depth that would kill them in a stiff soil.—P. N., in *The Garden*.

COUNTERFEIT TRUFFLES.

The *Farmers' Gazette*, of Dublin, Ireland, states that counterfeit truffles are put on the market in immense quantities, that are so skilfully made as to deceive clever judges of the article. It remarks that they are, "no doubt, appreciated by the *gourmets* of London and Paris in combination with their *foie gras*, for the time being, albeit the after effects might not be so pleasant, the delicious morsels being formed, not of fungoid tissue, but of an amalgam of kid skin or some other fine leather, seasoned with certain essences, and moulded into the shape and aspect of the truffle, so as to deceive the most accomplished of culinary *chefs*. Paris is credited with this very ingenious dodge—profitable, too, no doubt. What next?" Properly these truffles should be cooked with oleomargarine and eaten with lard cheese.



PLANT INQUIRIES.

This is my first year's acquaintance with your publications. I am delighted with them. I am a great lover of flowers, and have quite good success with them. I enjoy the correspondence in the *MAGAZINE* in regard to the care and culture of plants, and hope you will not deem the accompanying list of questions too long to be answered in your next number.

1. Will Hyacinths that have been forced in the house, this winter, answer the same purpose next winter? What treatment and care should they have after blossoming in the house? Does the Hyacinth form a new flower-bulb each year, the old one decaying?

2. Will the Day Lily bloom the same season, if bedded out in the spring?

3. Do the bulbs of the *Oxalis floribunda* require a rest during summer?

4. When should plants of the Sweet Violet be started, or how treated during summer to insure blossoms in the house during winter?

5. Is it best to plant the Calla in the ground during summer, or simply to turn it out of pot? Is hot water best for it during the growing season?

6. Should all the earth be shaken from the roots of the *Dracæna* each time it is repotted? What summer treatment does it require?

7. Please give name of enclosed insects, and best method of exterminating them from Carnations.

8. Do most of the ordinary house plants do better for repotting once a year?

9. My Jessamine is nearly two years old, blossomed late in the summer; but though it grows some, blossoms none this winter. What is the trouble? I have cut it back and enriched it. What is the summer treatment for it?

10. Will the Cape Jasmine succeed well and blossom freely in winter with ordinary house culture?

11. Why does my Heliotrope lose many of its leaves each time it blooms?

12. What size pots do well-grown Fuchsias and Geraniums require?

13. What climbers, suitable for verandas and trellises, will endure our winters here without protection?

14. Do you regard the Rubber Sprinkler as good for window garden uses as the simpler forms of the brass syringe?—Mrs. F. M. W., *Huron, Dakota*.

1. Hyacinths that have once been forced will not give fine blooms again. These bulbs are sent out by the Holland bulb growers when they are in their best condition, and the first season's bloom from them, whether in the house or the garden, is the finest. After blooming in

pots, the plants should be carefully tended and have water supplied as needed, with the view of promoting the full growth of the bulbs; as soon as the weather permits they can be turned out carefully in a warm place in the open border, and be left to mature, or still earlier they can be placed in a cold-frame. These bulbs can be planted in the garden in the fall, and will continue for several years to throw up small spikes. Bulbs that have bloomed in water will be nearly worthless afterwards. A new flowering bulb is not formed every year.

2. The Day Lily may bloom the first season it is transplanted, but ordinarily it will not, and it is better for the plant that it should not.

3. There is no better way to serve *Oxalis floribunda* than to turn it out into the garden at the commencement of summer.

4. Young plants of Violets set out in the garden in spring, in a rich and slightly shaded place, will make good plants for potting in the fall; in case of drought supply them with water.

5. Plant out the Calla in the garden at the commencement of the warm weather, and it will require no attention until potting time, the last of August or early in September. Water of the temperature of the room is best.

6. In repotting *Dracæna* it is best to remove only the soil that will easily come away without disturbing the roots much. The plants can be set in the open border during summer, or they may be left in the pots and plunged to their rims in the soil, or they can be kept in the house or on the veranda.

7. The insects are the common green-fly, that is destroyed by fumigating with tobacco, or by dipping into or sprinkling with weak tobacco water or soap-suds or by dusting with tobacco dust.

8. As a rule, house plants should be re-potted before commencing a new growth.

9. The plant may be growing too freely to bloom, since it was cut back and the soil enriched. It is best to cut the plants back in the spring. In summer, plunge the pots in the soil of the garden border.

10. The Cape Jasmine is a summer blooming plant.

11. The air is probably not moist enough for the Heliotrope.

12. The plants of Fuchsias and Geraniums can be grown in six-inch, or at most eight-inch pots.

13. Virginia Creeper, Clematis Virginiana, Scarlet Trumpet Honeysuckle and Climbing Bittersweet are hardy in Dakota.

14. The Elastic Plant Sprinkler is well adapted to window plant use, and is cheaper than a syringe; but a good plant syringe is always useful.

ROOT LICE ON ASTERS.

Will you be kind enough to tell me what to do if my Asters are troubled as they were last year, with a sort of white lice on the roots. The seeds came up all right, and when the plants were about three inches high, I noticed they stopped growing and then began to wilt. I gave them water and shaded them from the sun by turning a flower pot over each plant. They would revive for a while, then wilt again as soon as they were uncovered and the water dried up around them. At last I examined their roots and found them covered with small, white lice. I took up each plant and carefully washed the roots and set them out again, keeping them well moistened and shaded from the sun for two weeks. Most of them survived the washing and began to grow once more, but the lice infested them again, and at last they all died. The same kind of lice killed my Heliotropes and Balsams. I was never troubled with them before, and have always had a lovely garden and fine success with Asters. I had some loam mixed with the soil, last May, and some manure from our stable, not a very great quantity. Do you think the lice came from the loam or manure, and will I be likely to be troubled with them this year? If you can and will give any information what to do, it will greatly oblige.—C. S. H., *Cambridgeport, Mass.*

Root lice are some of the most difficult insects to deal with, as the French vine-growers have learned to their sorrow, in dealing with the Phylloxera. The insect that infests the Aster plants in the manner described above is an aphid, a member of the same family as the green-fly. It is known as aphid radialis. Apparently there are varieties of these insects that are peculiar to different plants. Lettuce roots are often infested with them, and many plants at times are badly affected by them. Asters are especially liable to their attacks. The treatment our corres-

pondent gave the plants was probably as good as it could be, though it did not save them. Now, however, as it is probable they are in the soil, and will be ready to commence operations when their host is prepared for them, we may be able to frustrate their designs—forewarned is forearmed. In the first place, the plants should be raised in soil that is free from the insects, and sufficient quantity for this purpose can be brought in from some old meadow, and placed in a cold-frame, or some warm place in the garden. The plants should be transplanted two or three times as they grow, to secure an abundance of roots, and thus be able to start into a rapid and vigorous growth when finally transplanted. The soil where the plants are to stand to bloom, and which is probably infested with the lice, should have applications of soap suds made to it from time to time, until it is ready for use. Some wood ashes and coal ashes dug in will also be useful in destroying the insects, and some well-rotted manure will enrich it so that the plants will grow without stint. A strong, healthy growth of the plants will enable them to overcome the depredations of the insects, though they may not be entirely secured from them. We trust our correspondent will report results next fall, if these instructions be followed.

HEAT-LOVING PLANTS.

1. Does *Philodendron pertusum* flower, and how should it be propagated? I have one which has two long roots, like runners, growing up out of the pot. I have tried to get them to root afresh and send up a shoot, but so far unsuccessfully.

2. Is the *Maranta striata* a house plant? Does it flower, and how should it be propagated?

3. At what season should Cactus plants bloom in a greenhouse? Mine have looked badly all the winter and the leaves or side shoots turn yellow and drop off. The temperature of the house has ranged from 40° to 55°.

4. Can Begonias be grown through the winter and flower in such a temperature?—KINGSDOWN.

1. *Philodendron pertusum* has greenish white flowers; it is propagated by cuttings of the side shoots, the "root-like runners" here mentioned.

2. The Marantas are all tropical plants and need plenty of heat and moisture in their growing season, such as they can get only in a well conducted hot-house. They are increased by a division of the roots. They produce numerous flowers on a tall spike from the center of the plant.

3. Your Cactus plants have been kept too cool and moist. They need to be nearly dry and a temperature of 60° and above in winter. Most varieties make their growth in spring and bloom the latter part of spring and in early summer.

4. Begonias will do better in a temperature 10° higher than that mentioned, and there are many varieties that will bloom freely during winter, with proper treatment.

PRIMROSES AFTER BLOOMING.

What is the proper way to keep Chinese Primroses in summer, that have bloomed in winter?—E. W. B., *Liberty Square, Pa.*

Gardeners usually throw away the plants after blooming, as the flowers are larger on young plants, and the care of raising them is not much, if any, more than that of keeping over old plants; but many amateurs prefer to keep their plants, and we have seen them flower very freely even at three or four years of age, though the flowers get smaller from year to year. The latter part of this month plants that have bloomed can have their old flower stems and dead leaves removed and the balls of soil reduced, and be repotted in fresh, fibry loam and leaf-mold with a little sand, and placed in a cold-frame. As soon as the plants are established give air freely, and eventually tilt the sash over one side, except during storms. By July they can be shifted into larger pots. Attend carefully to watering, and keep them slightly shaded during the brightest part of the day, but otherwise allow the full light. In September the plants can be removed to the house. Even without a cold-frame the same treatment may be followed with the plants in a sheltered spot a little shaded.

DAHLIA TUBERS IN WINTER.

How are Dahlia tubers kept through the winter?—S. I. H., *Boston Station, Ky.*

Before hard frosts come, in the fall, lift the tubers, and let them lie on the ground a few days to dry some of their superfluous moisture. During this time a covering of some kind can be thrown over them at night, if there is danger of frost. After three or four days, remove all the soil from them and store them away in dry sand in a cellar, or some place where they will not freeze.

PLANTING CELERY.

A late bulletin of the New York Agricultural Experiment Station gives an account of an experiment made last year to determine the relative value of planting Celery in trenches or in level soil. In introducing the subject, Dr. STURTEVANT remarks: "Market gardeners, who are usually the first to introduce new processes of growing, on account of the competition they have to meet, found that the Celery grown upon the surface, and earthed up once for all at the latter part of the season, furnished profitable results, and this latter method seems now mainly the one pursued for commercial purposes. In the private garden, however, the trenching is in many cases continued, and it, therefore, seemed to us desirable to know the comparative merits of these two methods, for if surface-planting is equal in its product to the trench-planting it is far to be preferred, on account of the less labor involved."

The statement is then made that the list of varieties of which plants were raised "included twenty named samples." "On July 5th thirty of these plants were set in a trench, one foot deep, well manured at the bottom with thoroughly rotted horse-manure, and thirty plants were planted adjacent upon the level without special manuring."

No account is given of the after culture, nor of the time the plants were lifted. Presumably no attempt was made at blanching, that being left for a future operation; and no mention is made even of "handling" the plants, as gardeners term it, which consists in drawing soil about the base of the plants to keep them together when they have grown so as to give a leverage to the wind, which, by its action on them, causes the outer leaves to fall away from the central portion. Results are given as follows: "Averaging our results obtained in seventeen samples in which the varieties from the two rows are separately noted, we find that, omitting fractions, plants grown under level culture averaged one hundred and seventy-seven pounds per one hundred plants, while those under trench culture averaged one hundred and seventy-eight pounds per one hundred plants. The length of the bleached stems was rather greater and the suckers were rather more numerous upon the plants

grown in the trenches, but on the other hand, the bases of the stems were more often split and deformed than occurred in the plants grown upon the level. It appears, therefore, from this trial that the trench-culture yielded no advantage for the increased labor involved."

From the well known accuracy of Dr. STURTEVANT'S experiments, it is probable that the conclusion here arrived at is a proper one, though in the absence of full statements we may be obliged to assume the correctness of the details. But, in our opinion, there is little interest in this experiment compared with one which should show the comparative results of tests in raising the same kinds of Celery by both trench and level-surface planting, to produce the best and greatest amount of bleached and edible stalk in both ways. In the private garden especially, the quality and the amount of the edible portion of this crop that can be raised on a comparatively limited space are the points to be considered; and on these points the experiment quoted furnishes no light. An estimated weight of a hundred plants in each way is given, but what is desired to be known is how much of these weights in each case was edible and the quality of each. "The comparative merits of these two methods" for "the private garden," cannot, therefore, be considered as determined by the above test.

AUSTRALIAN PLANTS.

J. O., Fingal, Ont., raised some plants from Australian seeds, last summer, and has five healthy plants of *Cordylina Forsteri*, two of *Cordylina Australis*, and six healthy plants of *Callistemon brachyandrus*. "These three kinds are all that have wintered. Any instructions in regard to their future care will be anxiously looked for." Of the *Cordylina* plants the question is asked, "Are they Lily or grass?" In Australia they are called Palm Lilies. They are what are known in the plant trade by the name *Dracæna*; this is the name under which most of these plants were first classed, but afterwards called by botanists *Cordylina*. There are slight differences between the genera *Dracæna* and *Cordylina*, which, however, are not considered by gardeners. The plants, therefore, should have *Dracæna* treatment. The *Callistemon*

is popularly known as Bottle Brush, so called from the shape of the flower-spike; it is an evergreen shrub, in its native country growing to a height of twelve to fifteen feet. Several species are in cultivation, requiring ordinary greenhouse treatment. In summer, the plants in their pots can be plunged in the garden border. To many persons these plants are known under the name, *Metrosideros*, a name indicating iron heart-wood, on account of the density of the wood. The name, *Callistemon*, means beautiful stamens, fitly describing floral organs that are strikingly prominent.

THE PAXIUBA PALM.

Although the Palms, as a class of plants, have common, distinctive features, yet there is great diversity among them, and each species has its peculiarities. The illustration on the opposite page of the *Paxiuba* Palm, after an engraving that appeared in *The Garden*, exhibits this species with a stem or trunk that tapers from the base upwards, and in one individual as swelling out from the base for some distance and then tapering rapidly. If the drawing is reliable, the case is certainly remarkable in this respect, as usually the trunks of Palms taper so slightly as to be nearly or quite imperceptible. But the most wonderful feature of this Palm is its appearance at the base, which is described in the following language by the journal mentioned.

"Among the singular aspects of vegetation which meet the eye of the traveler in tropical regions, none is more striking and remarkable than that presented by the *Pashiuba* (or *Paxiuba*,) Palm of Brazil, *Iriartea exorrhiza*. The first sight of this tree suggests the idea that some careful hand has been at the trouble of placing round its base a tree-guard to protect the stem, somewhat after the manner in which the trees in our parks are railed and fenced in from cattle. A nearer approach, however, discloses the fact that the supposed tree-guard is neither more nor less than the roots of the tree itself, which are disposed in this strange fashion. These roots are of the kind known as "aerial," and spring from the trunk above the ground, new ones being successively produced from a higher point than the last. They take an oblique or diagonal direction until they



reach the ground, into which they descend and root themselves. As fresh ones appear, those underneath decay and die off, leaving the tree supported by a hollow cone of roots, which is sometimes so high that a man may stand in the center, with the stem of the tree sixty or seventy feet in length, immediately over his head. These roots are densely covered with small, hard, tubercular prickles, and are used by the natives as graters for reducing the inside of the cocoa-nut to a pulpy mass to be boiled with rice and water. The same peculiar mode of growth is exhibited by *Iriartea ventricosa* and several allied species."

A GARDEN JOURNAL.

May 1. Finished planting Artichokes. Uncovered the Figs, as the weather is coming in warm. They have kept very nicely in their winter quarters.

2. Sowing Asters, Ten-Weeks Stocks, Phlox Drummondii and seeds of other flowering annuals, in cold-frames.

3. Planting Hybrid Perpetual and Moss Roses in beds on the lawn; also planting some in the borders to replace those that have been winter-killed.

4. Planting *Hydrangea paniculata* in the borders. Clipping Box edging, it not having been clipped for two years.

5. Planting *Lilium pardalinum*, *L. Japonicum longiflorum* and other Lillies in the border.

6. Finished planting Lilies and Gladioli.

8. Finished clipping Box edgings, and made a general cleaning up of the walks.

9 and 10. Planting a variety of evergreen trees on the lawn, such as *Pinus nigricans*, *P. ponderosa* and *Cupressus Lawsoniana*, &c.

11. Planting a hedge of Norway Spruce.

12. Pruning the hedge of Siberian Arbor Vitæ; it is just commencing to grow. Tying down Roses to make them shoot from every joint, so as to get more bloom.

14. Sowing Radish seed in cold-frame. Planting a few Cherry stocks for budding in summer.

15. Digging the inside border of the cold Grapery, and tying up some of the vines, and planting a few young vines of Madresfield Court, Purple Constantia, &c. Sowed seed of Cabbage, Cauliflower and Brussels Sprouts for winter use.

16. Dividing and planting Maria Louise Violets which are intended for winter

forcing. They should have been planted earlier, but the spring has been so backward and other work so pressing that the delay has been unavoidable.

17. Planting out Carnations, Chrysanthemums and other half-hardy plants.

18. Thoroughly watering the cold Grapery inside, the first this season, as the weather has been so cold. Planting Hydrangeas, Thomas Hogg and Otaksa.

19. Sowing Champion of England Peas. Hoeing Parsnips, Carrots, Beets, Salsify and other seed beds which were sowed on the 18th and 20th of last month.

21. Sorting out bedding plants and cleaning the greenhouse.

22. Disbudding the vines in the cold Grapery. Labelling the evergreen trees planted on the lawn.

23. Planting out Cos Lettuce. We have had lately some very cold rains which have hindered out-door operations very much.

24. Sticking Sweet Peas and garden Peas.

25. Hoeing and raking walks. Preparing ground for Corn and Lima Beans.

26. The Melon seeds sown on pieces of inverted sod in a cold-frame grew well, and the young plants have done nicely, and to-day they have been transferred on the pieces of sod to the places in the garden where they are to grow. The hills are seven feet apart each way; a good half-wheelbarrow of manure has been well dug into each hill, and hand lights put over them.

28. Planting Lima Beans and Okra.

29. Pricking out Celery plants, of which there are about twenty-five hundred, and most of them are Boston Market.

30. Sowing a second lot of Spinach; that which was sown the 13th of last month is now fit for use. Planting out Tomatoes and Peppers.

31. Planting out annuals in the borders.

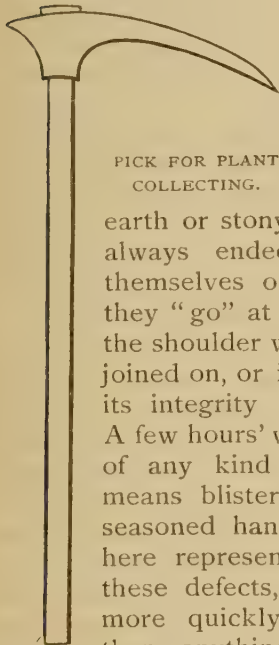
KILLING PLANTAINS.

A correspondent says "a drop or two of chloroform put in the center of a plant of Plantain will kill it, and so will salt." We suppose it is meant that the top of the Plantain should first be cut off, and the application be made at the cut surface of the crown or root. A drop of kerosene oil applied in this manner is sure death to the plant, and is preferable either to chloroform or salt.

PLANT-COLLECTOR'S PICK.

Those of our readers who have experienced the vanity of the trust reposed in a hand trowel when collecting plants on a botanical excursion will appreciate the value of the little tool of which an engraving is here presented. G. JEKYLL, its inventor, thus writes of it and describes it in *The Garden*, for the benefit of the public:

This faithful little companion of many days' plant hunting in a rocky region of



PICK FOR PLANT
COLLECTING.

Southern Italy has served me so well, that it deserves a strong recommendation. I have suffered many things of many trowels. When used in hard earth or stony places they have always ended in damage to themselves or to me; either they "go" at the handle or at the shoulder where the blade is joined on, or if the tool retains its integrity the hand suffers. A few hours' work with a trowel of any kind in hard ground means blisters even to a well-seasoned hand. The little pick here represented has none of these defects, and works much more quickly and powerfully than anything of the trowel

tribe. A *Crocus imperatri* or a *Cyclamen neapolitanum* comes up with a single, light, one-handed stroke, and a whole day's work does not strain or blister a woman's hand. The handle is of just such a length that it can be used with both hands or one only, and it is a great advantage, when climbing about in "nasty places," where one must hold on with one hand to rock or bush, to be able to get at some desirable plant in a rocky fissure one foot and a half beyond hand-reach. The tool is also a great help in climbing upwards; the point digs firmly, with an anchor-like grip, into earth or rock-chink, and as the head cannot possibly pull off, the whole weight of the body may be safely trusted to it. The iron head is eight inches long, and is tipped at the sharp end with a wedge of steel; the socket through which the

handle passes is a little widest at the top; the handle also is a little thickest at the top. When put on, the free end is passed through the socket and a few blows with mallet on the thick end fix it firmly. The whole length of the tool is twenty-two inches. One is tempted to fix on the head by a rivet right through, but this would be a mistake, weakening the handle, and giving an undesirable rigidity; should the head come loose, which rarely happens, it can be made tight again by jarring the thickened end of the handle down on a rock. The blunt end of the tool is convenient for knocking off projecting points or edges of rock, the better to get at roots in fissures.

DESTROYING GREEN-FLY.

In cultivating *Cinerarias*, *Pelargoniums* and hosts of other things subject to green-fly, constant care has to be exercised in order to keep that pest off, if possible, sometimes not an easy matter, especially in winter, when fire heat has to be so often used to battle with frost and damp. Fumigating is a good preventive, but when once settled under the large leaves of *Cinerarias* or *Calceolarias*, the enemy is difficult to dislodge, and the fumigating has to be repeated week after week. The most effective and cheapest way I know of in regard to dealing with aphides is dipping the plants in a solution of hot water with which is mixed a little soft soap and tobacco juice. This not only kills them altogether, but leaves the foliage distasteful to them afterwards. It is wonderful how quickly a few hundred plants can be dipped. Plants that cannot be operated on in this way may be syringed with the mixture with equally good results.—A. M., in *Gardening Illustrated*.

ROSE, GRACE DARLING.

At an exhibition in London, in March, of the Royal Horticultural Society, Mr. BENNETT, the famous raiser of Hybrid Tea Roses, showed specimens, for the first time, of a new variety of this class, bearing the name standing above. It is described as large and full with beautifully reflexed petals, as in *La France*. The color is a pleasing salmon-pink, similar to that of *Madame Lombard*. The plants apparently are vigorous and free flowering.

NATIVE FERNS.

The specimen of Fern here illustrated bears a somewhat close resemblance to the one described in February, on page 56; but that one, *Pellæa gracilis*, is smaller in all its parts than the present subject, though the difference is not so great that a superficial observer might

other genus of Ferns. In the illustration the tall frond represents the fertile one, the others are sterile. The specimen from which this drawing was made is of average size, and the length of the stipe of the fertile frond is six inches and the frond is nearly three inches; the stipes of the sterile fronds are about four inches

long, and the fronds about two inches.

This Fern grows in thickly clustered tufts; in a growing state the stems or stipes are greenish, but become light or straw-colored when dried; they have a shallow channel or furrow in front, and toward the base are a little chaffy. The fronds are three or four times divided, or pinnate, and the segments, or smallest divisions, are slightly toothed. The veins are pinnate on the mid-vein, and are mostly once forked near the base. The sori are oblong or roundish, and are arranged along the veinlets, and as they increase in size they become confluent, and cover the whole surface, and the edges of the pinnules roll backwards, meeting and sometimes overlapping at the middle, thus forming a little pod that wholly conceals them. The pinnules, full-sized, of both



CRYPTOGRAMME ACROSTICHOIDES.

not be easily deceived. It will be well to examine the one now under consideration, *Cryptogramme acrostichoides*, in comparison with the former. As this plant is peculiar to this country it has been called the American Rock Brake. Its long, Greek name is derived from *kruptos*, concealed, and *gramma*, a line, in allusion to the hidden fructification, as will be noticed further on. *Acrostichoides* means, like the *Acrostichum*, an-

other genus of Ferns. In the illustration the tall frond represents the fertile one, the others are sterile. The specimen from which this drawing was made is of average size, and the length of the stipe of the fertile frond is six inches and the frond is nearly three inches; the stipes of the sterile fronds are about four inches

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EATON says that this Fern is found in "dense tufts and patches, among rocks and in their crevices, from Arctic America southward to Lake Superior, Colorado, Alaska and the Sierra of California, where Professor BREWER found it at eight thousand to ten thousand feet above the sea." The specimen here

figured was procured at Soda Springs, Nevada County, California, at an altitude of seven thousand feet.

SEVERAL QUESTIONS.

1. My *Achania* grows well and is a good color, but leaves and stock are covered with what looks like the finest of silver sand. I observed this when the plant came from you. Is this a peculiarity of the plant?

2. I enclose two leaves of my German Ivy. Can you tell me what is wrong? It has grown well until within three weeks; the leaves affected dry up entirely. I am anxious to know, because this has been my experience several times.

3. How is *Oxalis Ortgiesii* propagated?

4. Also, *Lygodium scandens*?

5. In your catalogue, you say, *Hibiscus* does well in the house; in the October number, of last year, you say it is not suited to ordinary house culture. Two, procured last fall, have lived, and that is all. Shall I set them in the ground, this spring?

6. My *Tuberoses* grew well last year, but did not blossom. Some fault of mine, probably. Are the same bulbs good for this year?

7. What will grow well together, and how many plants can be put into a jardiniere, twenty inches by nine and four and one-half inches deep? This is for house culture in winter; it stands about two feet and a half high.—MRS. D. S. C., *Barrington, R. I.*

1. The objects on the *Achania* leaves are natural secretions of the nature of wax, and always to be found on this plant. Some varieties of *Abutilon* have the same peculiarity.

2. The leaves are evidently the prey of a fungus. It will be best to cut off all those affected, and as soon as they appear, and burn them. Without knowing more of this case we can only advise to afford the plant the best conditions of healthy growth, plenty of air, a good exposure to light without the direct sun rays, temperature of 65° to 75°, and plenty of water while growing rapidly, but a moderate supply when growth is checked.

3. *Oxalis Ortgiesii* is easily increased by cuttings.

4. *Lygodium scandens* is propagated by division of the roots and by the spores.

5. The Chinese *Hibiscus* needs more heat than window plants ordinarily receive, or than is good for them. Select a warm, sunny spot in the garden, and set out the plants when the cold weather is past.

6. The *Tuberoses* that did not bloom last year will be likely to fail if tried again, as it is probable they are deficient in flower spikes.

7. A half dozen plants, with some *Selaginellas* for undergrowth will be about all the case will hold. Ferns are best, but

if the case can be ventilated, a few other plants will do at least fairly well for a while, among which may be named, fancy-foliaged *Caladiums*, ornamental-leaved *Begonias*, *Ficus repens*, *Coccoloba platyclada*, *Cyperus alternifolius*.

PLANTS AND SEEDS.

Please tell me, through the MAGAZINE, what I shall do with my *Begonia rubra*. It has been in blossom all winter until now. A new stock has come up from the root, and is six or seven inches tall; shall I cut back the old plant when I set it in the garden, as I do *Fuchsias* and *Geraniums*? Can it be propagated by cuttings, the same as those plants?

Will seeds of Chinese Primrose and Ten-Weeks Stocks, left over from last year, germinate if sown this year? If so, will they be likely to produce as good flowering plants as new seeds? I purchased a twenty-five cent package of Chinese Primrose seed, last spring, sowed part of the seeds and raised four plants, which commenced to blossom before Christmas, and have been in bloom ever since; one plant has now so many flowers on it they almost hide the leaves; now, will these plants be of any use to keep over for another winter? I think I have read in the MAGAZINE that young plants produce the most flowers.

Will plants of Chinese and Japan Pinks bloom freely in winter? If they do, what are the best varieties to sow?

We like the MAGAZINE very much, and think it is better than ever this year.—MRS. J. P. L., *Centre Harbor, N. H.*

The last growth of the *Begonia* should be cut back at least two-thirds when the plant is set outside. But before that time it will be well to let the plant go with less water than it has been having, and allow the wood to become a little firm. The plant can be increased by cuttings.

The question in regard to the seeds left over from last year cannot be positively answered. A trial only can reveal their worth.

Information about keeping over plants of Chinese Primrose will be found elsewhere in this number.

We cannot advise Chinese Pinks for house culture.

LEAF-MOLD.

I notice that you frequently recommend leaf-mold as a part of the soil to be used in growing very many potted plants. I would like to ask you, through your MAGAZINE, if decayed logs, so frequently found in the woods, will not answer as well as the leaf-mold? An answer to this inquiry will oblige—J. R. H., *Ellenville, N. Y.*

The substance of decayed logs is essentially the same as that of rotted leaves, and will serve the same purpose in a compost.

WINDOW PLANTS.

Does *Bouvardia Vreelandii* require a season of rest? Mine bloomed freely about the holidays, but since the flowers faded it has made no new growth, drops its leaves, and, of course, because it is sick the aphids attack it. What shall I do to it. It is before a south window in a living-room.

Does *Cuphea* need any especial treatment? Mine has been ailing all winter. I have tried giving it sun and shade, but it has dropped its leaves mostly and looks as if it had been frost-bitten, though I do not think it has. My other plants look finely in the same situation, *Geraniums*, *Callas*, *Cacti*, *Coleus* and *Roses*. The soil in which the *Cuphea* is, is a mixture of garden earth, rotted manure, sand and leaf-mold the same as the *Geraniums*. I enclose a leaf of *Geranium* for name.—SUBSCRIBER, *Golden's Bridge*.

The *Bouvardia*, after blooming, should be given but little water, and then it can also be kept in a lower temperature. When warm weather arrives set the plants in the garden.

The *Cuphea* may have lacked drainage, or have had too much water.

A few plants may be named from their leaves, but with garden varieties this is almost impossible, and we cannot attempt it.

MAY FROSTS.

In most of the northern States we are apt to have unseasonably cold spells of a few days' duration in some parts of the present month; hail storms and severe snow storms are not infrequent. Our Apple crop, in this part of the country, has now been almost wholly lost for the past two years on account of the prevalence of cold storms at the time the orchards were in bloom. Damage from this cause we have, as yet, no means of providing against. It is often the case, however, that the greatest injury is from frost occurring after the storms have cleared away. This, to some extent, can be guarded against by keeping up slow fires on the windward side of the orchard during the time of the greatest danger, usually one or two nights. Smoke drifting through the tree tops will sensibly modify the temperature. Tender vegetables must be watched during this month and protected.

HEATING A SMALL GREENHOUSE.

I am thinking of building a small greenhouse. Which is best to heat with, steam or hot water, and how large a boiler will be needed to heat a house eight by sixteen feet.—A SUBSCRIBER, *Nashua, N. H.*

It is best and most economical to heat a house, like that here described, by means of hot water. We recommend "A Subscriber" to apply to manufacturers of greenhouse boilers in New York city.

MELOTHRIA—PILOGYNE.

In the January number I read about *Melothria pendula*, and thought I should like to see the vine at least. A few days ago I spied some small, white flowers on my *Pilogyne suavis*; I consulted GRAY, and found I had the plant I wished to see. It is all that VICK's catalogue claims for it as a house plant, and I have a new screen ready to try it out doors. A few weeks ago, I set the pot on a bracket in the center of a bay window, and now the windows have the loveliest lambrequins imaginable. It is as clinging as *Betsy Babbett*. The English Ivy over the window was within its reach and that was all that was necessary.—MRS. D. B. F., *Norwich, N. Y.*

There is reason to think that *Pilogyne suavis* and *Melothria pendula* are not the same plants. We have not now either authorities or specimens by which the difference can be ascertained, but as soon as possible the question shall be satisfactorily settled. Both plants belong to the same natural order, and their resemblance is very great, and it is not surprising that our correspondent should consider them the same. We do not wish, at this time, to give the reasons that govern our opinion in regard to the distinctness of these plants, but will bring the subject up again soon.

HOT-BED NOTES.

When we feel the warm air of spring, and see the springing buds and blades, we all feel a stimulus to join nature in her work by digging, sheltering, training, or otherwise aiding growth. It is, no doubt, a constitutional instinct, inherited from a long line of ancestors who have lived, as we all do, by the produce of the soil. One of the common tendencies of this sort is toward making up a hot-bed to give favorite plants, and especially those requiring a long season, a good start in April and May, for setting out when the soil becomes warm in June. The failure with these comes oftenest from the bed being made very small, when it becomes cool too soon, and the plants cease growing. Small beds, also, dry out soon and suffer from the washing and chill of frequent waterings. A very successful grower makes his beds double, like two beds set back to back, but without having any back, and he finds several advantages attending the method. He also makes the outer frame a foot from the one that supports the sash, and which stands on little corner posts. The intervening space is filled with manure and greatly aids in the retention of heat and moisture.—W.

MAY BUGS.

There have been so many May bugs, or June bugs, here the last few years that we cannot raise any young flower plants or vegetables. Can you inform us how to keep plants safe from them?—A. S., *New Berlin, Texas.*

As the bugs live only a week or ten days, it would be possible to protect some plants with screens during that time, covering the plants at night and uncovering them in the morning, as the insects do their mischief mostly at night. But



MAY BEETLE AND GRUB.

the grubs are worse than the insects, as they are very voracious and devour the roots of many plants. The best course is to shake all the trees in the morning and catch the insects and kill them with boiling water. It is a great deal of work, and must be engaged in by the whole community, and must be kept up year after year, until rid of the pests. If any of our readers can give advice in this matter, we hope to hear from them.

PLANE TREES.

Professor BUDD is quoted as saying in the *Iowa State Register*, that the Plane trees, which are the almost universal street trees along the newer boulevards of Paris, are the American species, *Buttonwood*, *Sycamore*, *Platanus occidentalis*. I was told, in Paris, that they were the Oriental Plane, a species of which LOUDON gives the preference for beauty and adaptedness of color, shading and form, as a tree for the vicinity of houses. It does not propagate so readily or grow so rapidly or so tall as ours will in the vicinity of water, but is considered harder in Europe, and is found to endure smoke well. A few years ago there was a controversy about the trees planted in London squares, which somebody had called American Planes. They proved to be Orientals. Both species of this beautiful tree are, as Prof. BUDD says, unique among trees; and he adds that the wood closely resembles Rosewood, and is be-

coming as fashionable for furniture as Black Walnut.—HORTULANUS.

BAGGING GRAPES.

In bagging Grapes, in June of last year, I used in part old bags. Many Marthas and some Wilders were thinned by rot. When taking the bags off, no difference was found between the condition of the Grapes in old or new bags; so, evidently, no germ of the complaint was retained by the bags used the year before. Some bags used for two Salem vines had been dusted inside with a pinch of sulphur, but no special result was observable, because all the Salems ripened in prime condition, and kept perfectly well. The two-pound paper bags, now everywhere used by grocers, were used, and they are well worth saving for the purpose wherever there is a vine attended to with some care as to pruning, training, and thinning of the fruit.—W.

POTATOES.

I purchased, in 1882, one peck of White Elephant Potatoes and one peck of Chicago Market. From the peck of White Elephant I raised nine and one-half bushels; from the Chicago Market eight and one-half bushels. I then planted four and one-half bushels of the White Elephant, last year, and raised one hundred and twenty-five bushels of them, and sold them for twice as much as the common kinds of Potatoes. The White Elephant is not only an immense yielder, but is an excellent table variety. The Chicago Market has the same good qualities, and is liked here by all who ever used it.—A. S. J., *Carson, Iowa.*

MOLES AND THEIR MISCHIEF.

I have noticed several times the statement that moles do not eat vegetables. Now, our big ground moles do eat Sweet Potatoes; they often clear a whole patch. Ours were half eaten, last year, by them. I know this, for the mole-runs went to the hills and from them, and often only the outside shell of the Potato would be left; and they must eat Castor Oil Beans, or why will they kill them when put in the runs? Our moles are as large as big rats, and they riddle a yard or garden with raised ridges. All farmers here will say that moles eat Sweet Potatoes. The little meadow moles in York State may be insectivorous; I think it is.—ELMINA, *Snowville, Va.*

A gentleman lately returned from California, says that moles there eat the roots of Peach and other trees, so that frequently they die, and that the moles are larger than our common meadow mole.



SPRING.

Fripping lightly o'er the lea,
Comes a maiden fair to see,
And we call her Spring;
She is full of tears and smiles,
Charms us with her winsome wiles,
Till her praise we sing.

And she binds her brow with flowers,
Culled in Nature's woodland bowers,
Or by limpid stream;
Wears a robe of green and gold,
And from out each shining fold
Purple Violets gleam.

Do you look for smiles, to-day.
She will turn with tears away,
Vexed though you be;
But, to-morrow, Roses fair
She will twine within her hair,—
Such a child is she.

Yet we love her; waiting long,
We have wooed with winning song
This fair maid, sweet Spring;
Does she smile, or does she weep,
Care we not, so we can keep
Sight of her, we sing.

—LILLA N. CUSHMAN.

WILD GARDENS.

I.

I wonder if the boys and girls who read this paper, and who are fond of flowers, realize what beauty is scattered all about them, and is to be had if they will put out their hands and gather it?

I like all flowers, but I am fonder of our native flowers than I am of any brought here from other lands, not particularly because they are natives, though I admit frankly that that fact is an argument in their favor with me, but on account of their real worth. We have shrubs and flowers growing in our pastures and woodlands finer than many imported plants, but year after year they have been neglected, on the principle that what is to be had with little trouble is hardly worth having, I suppose. This principle is wrong. We should appreciate beauty anywhere and everywhere,

and that beauty which costs least is the beauty which can do the most good, because it is for everybody if they will have it.

I wish I could persuade the boys and girls to start wild gardens all over the land. What I mean by that, is, to begin making a collection of our native shrubs and flowers. They can obtain them easily. The tramps through pastures and meadows, and over hills after them will be delightful in themselves. They will go with their eyes open, and soon the habit will be formed of taking keen observations as they go. They will be surprised to find that we have so many beautiful things all about us. They will become interested in gathering them together, and the wild garden will afford them a great deal of pleasure and profit. The profit may not be of the kind reducible to dollars and cents, but there are many kinds of profit representing greater benefit and real worth.

Suppose the children in a neighborhood club together and take up the work of forming collections of native plants. To succeed in this they must go to work intelligently. You cannot expect to go to the woods and remove a plant from a soil rich and moist with leaf-mold to a corner in the garden where the soil is of an entirely different character, and have it flourish there as it does in its native quarters. You must make the conditions under which it is grown as nearly alike as possible. Bring some of its own soil with it, enough to furnish it food until it has become established in its new home, and supply this food regularly every season. To imitate these natural conditions, you will have to study the plant and its surroundings. This study is very interesting to any one who loves nature.

It would be a good plan to form a sort

of club. When you add a new plant to your collection describe it at the next club meeting. Look up your botany and find out just what the plant is and all about it. You will find this a fascinating way of studying botany. It applies the science in a practical way. At your club meeting compare notes. Report the finding of rare or peculiar plants. Give a description of the process of removal and the result. Tell all the particulars about the plants you secure. In this way you will learn to be careful, accurate and expressive. You will be learning a great deal in a very pleasant way.

The grounds about any farm house can be beautified by the use of the plants nature grows in her garden to give away to whomsoever will take them. If you take them do not attempt to improve on nature's manner or method. There never was any gardener with such consummate taste and skill as nature has; she knows just what each plant is capable of doing, and precisely how to grow that plant to bring out its beauties to the best advantage. Instead of differing with nature, or thinking to out-do her, study her ways of doing things, and imitate them as far as possible. A keen study of her ways will soon convince you that she knows always what she is about and makes no mistakes. You cannot say that of other gardeners.

Next month I shall mention some of our wild plants that are desirable to cultivate.—EBEN E. REXFORD, *Shiocton, Wis.*

AUNT THANKFUL.

"Mary," said George Bradford, one evening, to his wife, "does thee know of a man in my employ called Chester Wright? Well, he has proved so faithful and efficient, and withal so silent and dejected, that my sympathies have been quite aroused in his behalf. So, to-night, when he quit work, I kindly said to him, 'Chester, I have often noticed thy sorrowful countenance, and have wondered if there were any special trouble of mind or body depressing thee.' He was instantly touched, and in husky tones answered: 'There is, indeed, sir. I have thought I could speak of it to no one, but I can to you, since you have asked me.'"

"Father," interrupted young Ira, a fourteen-year-old son, "some mornings, little

Ches. Wright comes to school looking as though he had half cried his eyes out. We boys have often wondered what was the matter with him."

"Poor fellow!" said the father, "but don't interrupt me again until I have told thy mother what the man said, and never mention the subject outside of the house; remember." Then, turning to his wife, he resumed: "Chester went on to say,

"'I have a crippled mother who was more to me in early life than some mothers are to their sons, and I desire to make her old age as happy as possible. She usually gets around in a wheeled chair, and is seldom sick, though feeble. For the last few days she has been confined to her room.

"'I was unfortunate,' he continued, 'in my choice of a second wife, who was recommended to me, and through whom I had hoped to make a pleasant home for my mother and little son. But just the reverse is the case. They are both liable to mistreatment or neglect whenever I am absent, and I see no way to help it.' And, so saying, he hurried homeward."

"I feel," said Mary Bradford, "that something ought to be done; but just what, I do not know. It is a difficult case."

"So I felt," said her husband, "and hence said nothing. If thy health would admit, as of old, of thy going about comforting the troubled, and helping the needy, I could have promised the man a little cheer, at least."

"I know what I can do," exclaimed Naomi, the sixteen-year-old daughter, "that is, if you'll let me. Send me up there with some flowers. I can take a blooming pot-plant from the window garden, and I know where I can get a square of sod just full of Snowdrops. And then I can 'prospect' and report, you know."

"But, daughter, what if the mistress of the house object to intruders?"

"Sure enough. They live on the hill, near the school house, and I've often seen her outside, and she looks like a perfect vixen. If brother Ira will go with me this first time, I will not object to having company."

Ira replied, with great spirit, "Of course, I'll go; and the cross thing had better behave when I'm around!"

"Be careful, son," said the gentle mother, "thee will not do or say anything that is not manly and polite."

The next morning was bright and sunny, with a touch of March crispness in the air, when the brother and sister were on their way to perform their doubtful mission.

The small flower-pot and sod of Snow-drops were in one basket and some Oranges in another. The latter, Naomi declared, she would have nothing to do with, but Ira had insisted upon taking them as his own offering.

As they ascended the hillside to the house the woman herself appeared in the doorway, with head up in air, as though sniffing those baskets from afar. She was tall and square-shouldered, with long arms, sharp elbows, and large, bony hands. The latter were planted firmly upon her hips, and standing thus, she glowered down upon them as though she were an ogress guarding her den. Ira soon decided he should give her no chance to try her prowess on him.

Approaching the house with as confident an air as possible, Naomi greeted the woman, and then inquired, very sweetly,

"Is thee the wife of Chester Wright, who works for my father?" After a moment's steady staring into the modest, sweet face, she snapped out,

"Yes, if that's any of your business."

"And may I take these few flowers in to the sick woman, here?"

"I can give them to her; here, hand them to me."

"But I would rather take them in myself, please; O, do let me!"

"Well, come along then; I don't care. What good'll them weeds do her, any how? Besides, she aint sick; doctor says she aint. She's only hurt her old leg, that's always lame, anyway. Then she motioned Naomi to a dark entry, telling her to go on into the bed-room, and returned to look after Ira, who was still outside, considering the propriety of entering.

"What have you got there?" she spitefully questioned.

"Only Oranges," he answered, raising the lid.

"Oranges, indeed! you folks want to pamper the old woman up till nothing we can get for her will be good enough.

Get away from here, or I'll scald you" And she started away for a dipper of hot water, when such a frightened scream came from Naomi that she dropped it and hurried in to see what was the matter.

To return to Naomi, as she entered the passage she noticed an outside door in the opposite end, and another at her right. At this she softly rapped, and then stepped in. But oh, what baleful atmosphere had she walked into. And the woman, so still and pale. Was she dead? She certainly looked like it. Screaming with terror, she instantly retreated to the outer door and set it wide open. Then, holding her breath, she rushed into the bed-room and threw up the sash of the one little window.

By this time Mrs. Wright had appeared, and giving one glance at the old lady, had snatched up a charcoal furnace standing at the foot of the bed and carried it outside, and then returning tried to assist Naomi in restoring the woman to consciousness. But neither one knew what to do, and could only fan the fresh air into her face and shake the bedding free of the charcoal gas. Ira had rushed for a doctor as soon as he saw the condition of the woman; but before he arrived she had given a gasp, and then another, and finally revived sufficiently to realize her sufferings. The doctor while watching her spoke his mind.

Mrs. Wright was so subdued that she listened quite humbly to a short dissertation on the fatal results of inhaling carbonic acid gas, whether from burning coal or from other sources. The thoroughly frightened woman explained that Aunt Thankful, as the doctor called her, had complained of chilliness, and so she had set the furnace, which was prepared for ironing, into the little room as the quickest way of heating it. The doctor answered that she was too old a person to be so ignorant as that, which made her flinch all over. But she suppressed her wrath, promising herself to lay this up against him for redress in the future.

Meantime, Mr. Wright had appeared, almost distracted, and some neighbors having come in also, Naomi thought it time to return home. So, leaving her flowers in a corner of the room, she passed out, Mrs. Wright following her.

"May I call to-morrow?" Naomi inquired.

"I s'pose so, if you'll keep your mouth shut about what's happened, for the old woman would have died if you hadn't come in when you did."

Then, turning to Ira, she clinched him by the shoulders and shook him up till his blood tingled, exclaiming:

"See here! if you go to tattle-taling this all around, I'll make you see stars in broad daylight, as sure as you're alive! And how'd you dare come in the house, any way, when I forbid you!"

"Why, don't thee see those Oranges in the big dipper? They are for thee. Nobody told me to bring them to the old lady. And when I heard Naomi scream, of course, I came in; and afterwards, when I saw the dipper empty, I thought it could hold Oranges as well as hot water."

Mrs. Wright was dumb-founded. Her features relaxed, her body grew limp and she settled into a chair. "Nobody ever brings me anything," she said, "What makes you so different from other boys? Is it because you say 'thee'? I think it sounds awful flat."

"I said it when I first went to school, because I had promised my mother to do so, and I still use the same language to show that I am not ashamed to talk as my parents do. I can quit it when I choose."

When Naomi and Ira reported their experience at home, their parents were greatly shocked that a woman so loved by a son should suffer such treatment from his wife. Ira's maneuver with the Oranges, they thought was a fine stroke of policy under the circumstances, and all agreed that to be of much use to Aunt Thankful, Mrs. Wright's good will must be secured.

The next day, when the two called on Aunt Thankful, Ira remained outside so as to secure Mrs. Wright's attention, while Naomi could talk to Aunt Thankful. She was much improved, and expressed great gratification for her escape from the kind of death that had threatened her, because of the great trouble it would have caused her son and his wife.

When Naomi pressed her to know how she could most benefit her, she acknowledged she had forbidden her son to bring her meals to her, as he did at first, to make sure she had plenty, for it made it so much harder for her when he was

gone, his wife always throwing it up to her that she had made him think that she did not get enough to eat; and so the consequence was that when confined to her bed she was always hungry.

The next day Naomi went again and smuggled a lot of eatables from under her shawl into Aunt Thankful's great covered basket, which she always kept near her. This sort of smuggling worked to a charm until such time as it was decided that Aunt Thankful could be brought to George Bradford's for a long visit.

So, one bright April morning, Naomi, Ira and Chester Wright brought Aunt Thankful sitting in her wooden-wheeled chair, in a spring wagon, big basket and all. Mary Bradford met her with an angelic welcome, and soon afterward she was introduced to a cozy corner, where she could sit quite near the doors of her bed-room and the dining-room. On the other side of her was placed an old-fashioned stand with empty drawers for her own use, for busy hands had Aunt Thankful. Many were the striped and speckled and tufted mittens and gloves that she afterward knit sitting in that corner. When George Bradford first greeted her he asked if the change did not seem odd, and she answered, "If it were not wrong to hint of such a contrast, I could say that it seems like Paradise to me, here."

As long as the families were accessible to each other, these visits of two or three weeks' duration were repeated; and she gained flesh and strength, and a new life. During the following winter Naomi heard an interchange of words between her mother and Aunt Thankful, which she could not forget.

"Aunt Thankful," said Mary Bradford, "I often wonder if these visits here make home seem more dreary than ever when thee returns to it."

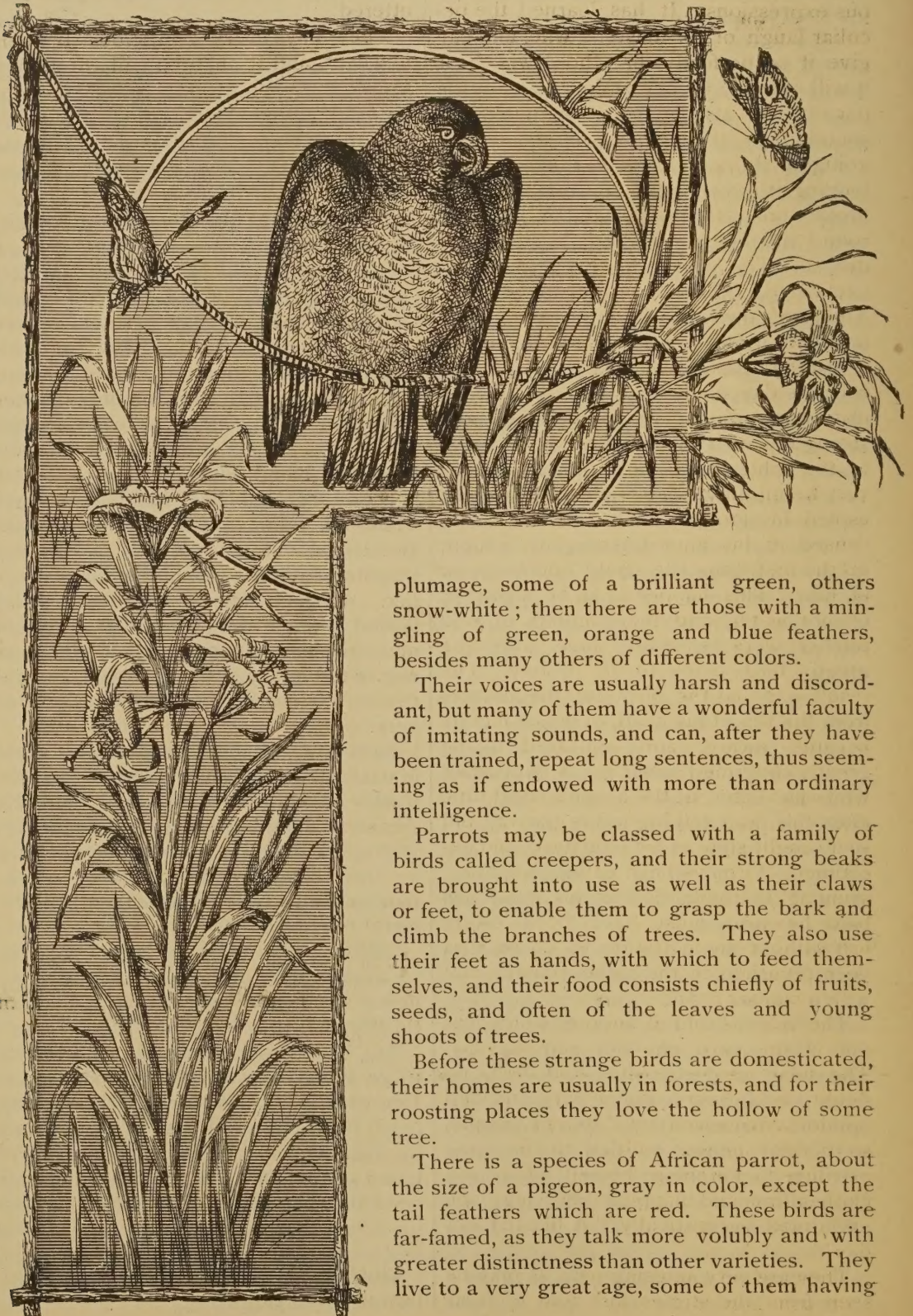
"O, bless your heart, no! When I'm there I just live these visits over again. Every thing I've seen or heard comes up again like new, and it's all of it company for me. O, no, you've made my life at home a great deal easier to bear, and ever since the time that you had Chester and his wife to tea here with me, she seems like a changed woman in some respects. I think it gave her something to think of, too."—AUNT MARJORIE.

PRETTY POLLY.

There are many species of parrots, those curious birds which so often are numbered among the household pets, and some of them are quite large, measuring

from the beak to the tail nearly three feet, while others are not larger than the little sparrows.

They are principally tropical birds, and most of them have gorgeously-colored



plumage, some of a brilliant green, others snow-white; then there are those with a mingling of green, orange and blue feathers, besides many others of different colors.

Their voices are usually harsh and discordant, but many of them have a wonderful faculty of imitating sounds, and can, after they have been trained, repeat long sentences, thus seeming as if endowed with more than ordinary intelligence.

Parrots may be classed with a family of birds called creepers, and their strong beaks are brought into use as well as their claws or feet, to enable them to grasp the bark and climb the branches of trees. They also use their feet as hands, with which to feed themselves, and their food consists chiefly of fruits, seeds, and often of the leaves and young shoots of trees.

Before these strange birds are domesticated, their homes are usually in forests, and for their roosting places they love the hollow of some tree.

There is a species of African parrot, about the size of a pigeon, gray in color, except the tail feathers which are red. These birds are far-famed, as they talk more volubly and with greater distinctness than other varieties. They live to a very great age, some of them having

been known to exist for more than a hundred years. One which is owned by a gentleman in the western part of New York State, seems to have unlimited powers of imitation, and is constantly surprising his master with new and curious expressions. It has learned the peculiar laugh of its master's wife, and can give it so perfectly that those who hear it will scarcely be persuaded that it is the parrot. It also exactly imitates the sound of creaking shoes, or of any one going up stairs. One day, the horse belonging to this same parrot's master, broke loose from the stable and ran round the house, neighing loudly as he did so. The parrot hearing the sound, exclaimed, "O lordy! he can whistle." The bird's owner says that he would not part with it for over a hundred dollars.

Another parrot who was very fond of fish, one day, made his way to the kitchen just before dinner was to be served, and seeing the dish of fish ready to be sent to the table, he began to help himself very bountifully, when suddenly the cook espied his lordship. She was highly incensed at his impertinence, and caught up the first thing she could find to throw at him. This happened to be a pitcher of hot water, and the contents of said pitcher were speedily flung over the greedy bird, much to his dismay. The result was that the bird lost the feathers from the top of his head, of which fact he became aware, and appeared to be greatly chagrined about it. A gentleman who was visiting at the house a short time after this, was talking to the parrot, and so it caught sight of his bald head, and exclaimed, "You've been eating fish, too;" seeming to think, that as his head was bald he also must have been eating fish without an invitation to do so, and been punished in the same manner, and with a similar result.

The story is told of another which was out in the yard one hot, summer day. The heat was excessive, and Poll, no doubt, had heard many very decided opinions expressed by different people, so thought she was entitled to the same privilege. Perching herself upon the clothes line, and flapping her wings, she exclaimed, energetically, "A blasted hot day!"

They are very amusing pets, as may be seen from the stories just told of their

funny sayings. They readily pick up household words and expressions, and it seems truly strange to hear a bird speaking one's very language so plainly, and often its sayings will seem very appropriate for the times when they may be uttered.

They have very capricious tempers, however, and if angered will not hesitate to bite even those who may be kindest to them, therefore they are sometimes difficult to manage; but as a general thing, if kindly treated and patiently trained they will reward one with their curious tricks and comical sayings.—M. E. WHITTEMORE, *New York*.

LETTER FROM NEBRASKA.

I have never written a letter to your MAGAZINE, so I thought I would write one. I go to school; we have no flowers near the school house, except wild ones. There are very beautiful ones on our prairies. Last fall, I had a lovely white Aster; it had six double flowers at one time. Last summer, we had Petunias, Marigolds, Pinks, Tulips and Stars of Bethlehem. Mama sowed Verbena seed, but they did not come up very well. We had a splendid lancifolium rubrum Lily; it had three flowers on, last summer. I am a girl, and am nearly fifteen years old. My sister and I ride horseback a great deal. We have a pony two and one-half years old; her name is Nellie, she is dark brown, and very pretty. I hope your MAGAZINE will always prosper; I enjoy it very much. Good bye.—W., *Risings, Nebraska*.

THE NARCISSUS.

Here young Narcissus o'er the fountain stood
And viewed his image in the crystal flood;
The crystal flood reflects his lovely charms,
And the pleased image strives to meet his arms.
No nymph his inexperienced breast subdued
Echo in vain the flying boy pursued.
Himself alone, the foolish youth admires,
And with fond look the smiling shade desires;
O'er the smooth lake with fruitless tears he grieves;
His spreading fingers shoot in verdant leaves;
Through his pale veins green sap now gently flows,
And in a short-lived flower his beauty blows.
Let vain Narcissus warn each female breast,
That beauty's but a transient good at best;
Like flowers, it withers with th' advancing year
And aye, like winter, robs the blooming fair.

—GAY.

Pinching the ends of soft shoots is the best way to prune.



MICHIGAN HORTICULTURAL SOCIETY.—The thirteenth annual Report of this society has been received. It is a volume of five hundred pages, and is a credit to the able Secretary, CHARLES W. GARFIELD. Besides very full reports of all the meetings and exhibitions of the society, there are collected together under the title, "A Primer of Horticulture," a number of valuable essays prepared by experienced cultivators and proficient writers, on the cultivation of the different kinds of fruits and vegetables, on nut-bearing trees, the flower garden, ornamental planting, &c. This portion of the report has also been published separately for wider circulation. The "Secretary's Portfolio," another department of the report, consists of many interesting notes from horticulturists, and selections from their writings. The fruit catalogue is a prominent feature of the report. It is very full, and as it is revised every two years, it contains the latest and most reliable information regarding the varieties of fruit cultivated in the State. The President, in his annual address, noticed the decease, within the last two or three years, of several who had been more or less intimately connected with the society, and among them were JAMES VICK, HENRY E. HOOKER and HENRY B. ELLWANGER, of this city, and CHARLES ARNOLD, the well-known nurseryman and originator of new fruits, of Paris, Ontario, and Dr. JOHN A. WARDER, of Ohio.

PLANTS OF THE SOUTH.—The new edition of the *Flora of the Southern United States*, by Dr. A. W. CHAPMAN, issued recently by IVISON, BLAKEMAN, TAYLOR & CO., of New York, is a handsome volume of seven hundred pages. Its typographical and mechanical features are quite pleasing. Since the work was first issued, in 1860, many tropical forms of vegetation have been discovered on the peninsula and keys of Florida, and many northern forms in the mountainous regions of Tennessee and North Carolina, making a necessity for a new edition, embracing them all. The new matter is appended as a supplement. The whole work is now a very complete treatise on the flowering plants and Ferns of Tennessee, North and South Carolina, Georgia, Alabama, Mississippi and Florida, and we recommend it to plant students in all the southern country, with full assurance of its entire trustworthiness. In the preparation of this work Dr. CHAPMAN has performed a most valuable service to his countrymen, and few, if any, of those who shall avail themselves of the result of his persevering and laborious studies will be able to appreciate the magnitude and the perplexities of his task. The volume will be sent by mail, prepaid, for \$4.00, on application to the publishers, or to ASHMEAD BROS., Jacksonville, Florida, or to Dr. A. W. CHAPMAN, Apalachicola, Florida.

VIGNETTES FROM INVISIBLE LIFE.—One of the most entertaining books in the interests of popular science which it has been our good fortune to read lately is a volume of less than two hundred pages with the above title, written by JOHN BADCOCK, F. R. M. S., and published by CASSELL & COMPANY, New York. The subjects are mostly new ones to popular scientific literature, and the writer is congratulated upon the able and interesting manner in which he has displayed them. The language is re-

markably pure and elegant, and the style pleasing in a high degree. In these accounts the microscopist will recognize some of his aquatic acquaintances, and his pleasure in examining them hereafter will be enhanced by the information concerning them here given by one who has studied them closely. Under such suggestive titles as "Plant Animals," "Revolving Animals," "The Brick Makers," "Tube Dwelling Reptiles," "Crystalline Vases and their Inhabitants," "Revolving Plants," "Animated Trumpets, Hats and Purses," "Nature's Jewels," &c., &c., he describes some of the most exquisitely beautiful of microscopic objects. Price, \$1.25.

MAGAZINE AND GOOD CHEER.—Each successive number of *Good Cheer* sustains the promise of its publisher and the expectations of its readers, and more, we think it improves with age. It is full of interest from beginning to end, and of such a character as to suit a great diversity of readers, and while it interests it also conveys good and useful instruction. Subscribers will be supplied with it and our MAGAZINE, commencing at any month and continuing for a year, for only \$1.25 for both journals. We are pleased to say that our subscription list is constantly enlarging, and that those who have gardens, and raise plants in all parts of the country are finding the MAGAZINE encouraging and helpful. Our many readers and friends will please accept thanks for the kind words spoken to neighbors in our behalf, and we trust our monthly visits may never cease to make them glad.

DRUGS AND MEDICINES OF NORTH AMERICA, is the title of a new quarterly lately commenced by J. U. & C. G. LLOYD, of Cincinnati, Ohio, devoted to the historical and scientific discussion of the botany, pharmacy, chemistry and therapeutics of the medicinal plants of North America. The first number is very handsome in all respects, with good and new engravings, and full page illustrations of all the more important plants. From the text it is evident that this will take rank as a first class authority on the subjects of which it treats. Some of the ablest professional talent in the country are rendering assistance in its preparation. To physicians and druggists it must prove particularly valuable. Price, \$1.00 a year.

PRESERVING AND REPLANTING FORESTS.—A report on this subject compiled by R. W. PHIPPS, at the instance of the government of Ontario, has been published in large pamphlet form, with maps showing the heights of land in Ontario, and the relative amount of forest yet standing in the different counties of the Province. The report shows the necessity of government supervision of the forests. It gives the scientific aspect of the case, corroborative evidence from other lands, measures taken elsewhere in pursuance of the same object, and suggestions as to necessary action. It is not too soon for Ontario, as it is not for our State and our whole country, to take measures to guard the forests.

ENTOMOLOGICAL REPORT.—The third report of the U. S. Entomological Commission, is an elaborate work of some four hundred and fifty pages of letter press, besides maps of this country, and seventy-four carefully prepared anatomical plates relating to the Rocky Mountain Locust, the Western Cricket, the Army Worm, the Canker Worm and the Hessian Fly. Besides the above are, also, descriptions of larvæ of injurious forest insects. The work is a credit to all connected with it, and especially to Prof. C. V. RILEY, U. S. Entomologist.